The Builder.

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THE demand for a museum illustrative of our national architecture is becoming louder, and must ultimately be listened to by those who are in authority:—a collection of casts chronologically arranged, where the student may draw and compare, and so gain in a month a clearer understanding of the peculiarities which distinguish different epochs than he now does in the whole of his clerkship,—sometimes the whole of his life. Year after year the importance of obtaining such a collection has been urged by different individuals, but has been disregarded, and, in some quarters, laughed at; and, to the disgrace of succeeding governments be it said, no attempt even, has yet been made to form it. Two years ago Mr. E. B. Lamb addressed a very sensible letter on the subject to the trustees of the British Museum, praying them to provide in their new building an extension of accommodation for British antiquities, so that works of British art, from the earliest to the latest periods, might be arranged in the national museum. He pointed out, that specimens judiciously procured from various parts of the country, and arranged in chronological order, would enable the architectural student to gain such a knowledge of the forms of ornaments, mouldings, and sculpture, as could not be obtained from the objects themselves in their original position. The distinctive characteristics of Gothic architecture being divided into numerous classes, and each style imperceptibly growing out of the other, the gradations are so delicate, and the peculiarities so minute, that without a place for the reception of well-selected examples, the student is put to considerable labour and expense before he can acquire any knowledge of that part of the art; and then only by unweared exertions, and the examination of many edifices.

The answer he received was, "The trustees are not prepared to recommend her Majesty's Government to provide in the museum for any general collection of remains of the Gothic architecture of Great Britain," and there the matter stopped. An outbuilding, a mere shed, would have been something, and might at once have been filled with actual relics and casts, at present put away in holes and corners. At the Royal Academy, for example, a considerable number are stowed away in a cellar simply for want of a proper receptacle. But no, the trustees were not prepared to recommend that any attempt should be made to meet the want which was felt, and advance the study of our national architecture.

At the last meeting of the Institute of Architects, a paper on this same subject was read, as will be seen in another part of the present number of our journal, and was warmly responded to. It was then suggested, that the Institute should not simply look on and wish, but should come forward and act; and we sincerely hope that the suggestion will not be disregarded.

Mr. Wyse, we understand, is about to bring the matter before Parliament, and now, therefore, is the time for all who feel how advantageous such a collection would be to petition the legislature, and otherwise assist the endeavour so far as they may be able.

It is not simply to the professional inquirer that such a museum would have great attractions. Architecture now occupies the attention of a much larger class than it formerly did. Many now say with Chateaubriand,—"it cannot be denied that architecture, considered as an Art, is in its principle eminently religious—it was invented for the worship of the Deity, and those who had a multitude of gods, were led to different kinds of edifices, according to the ideas which they entertained of the different powers of those gods:" and with this feeling have commenced the study of it earnestly. Look also at our carvers, modellers, glass painters, and other decorative artists, now coming into more active existence, to whom such a collection would be of the first importance, and it must be seen that a very large section of the public would hail the establishment of a museum of national architecture as a boon.

For a continuation of the subject, we refer to the following article.

THE PRESERVATION OF NATIONAL ANTIQUITIES.*

"You, too, proceed! make falling arts your care,
Erect new wonders, and the old repair."

UNDER the conviction that specimens of medieval art still remaining in England are more numerous, and of more interesting character, than generally supposed, even by many antiquaries, we have endeavoured to give some notion of the extent to which examination, and the immediate prevention of further destruction is needed. The necessity for something more than individual exertion is great and pressing, as well to preserve antiquities of national value, as to rescue ourselves from the reproach of being the only one among modern nations, wanting in the proper estimation of records of such interest and importance. Associations for objects of an antiquarian nature have either lost the vigour of their youth, departed greatly from the objects of their foundation, or are consuming valuable time in disputes, ridiculous in their origin, but not on that account the less interminable. The Society of Antiquaries does nothing more than publish transactions, and hold weekly *conversazioni*, though its long standing, and the great names it boasts, gives it the opportunity of effecting a considerable amount of good. The committee of the Cambridge Camden Society, because not seconded in practices foreign to its ostensible purpose, have threatened to break up the whole body, thus at the same time concluding the only approximation to an effectual supervision of medieval remains, that we have experienced. Lastly, the British Archæological Association, from which so much was expected, is likely to end its days in contention on matters having no bearing upon the real objects of the institution. Thus, the fate impending over our cathedrals and churches is as lowering as ever, and the necessity for the immediate attention of the Government at once apparent. It may indeed afford matter for surprise, that while the Governments of foreign states are actively employed in upholding the decaying fabrics, and in furthering the pursuit of art in their respective countries, ours rather holds such matters to be without the sphere of the duties of a minister. But an enlightened administration will surely advance in the path it has already indicated, and willingly hear any practical suggestions for the attainment of an end of such manifest importance.

The systematic examination and description of those treasures of art with which this country is enriched, while adding to the antiquary new objects of interest and investigation, could not but advantageously influence the ornamental and decorative branches of art, and add new data for the elucidation of obscure points in British history. No longer confined to the biography of monarchs, and to the picture of martial strife, history, in the hands of its true illustrators, treats the condition of the serf and the peasant as having a stronger claim, than that of the noble and the potentate; the history of a country is the history of the people who dwelt in it, *their* manners, civilization, and arts, not of a section of its rulers. The historian, Gibbon, felt the importance of placing history in this light, and in the absence of other annals than those of princes and signors, derived from architectural monuments and kindred sources, materials for a narration, highly suggestive of the state of society in Italy, during the eventful times of which he wrote. The writer has elsewhere said:—"The architecture of Egypt in its paintings and hieroglyphics, in its long and gloomy vistas, and its avenues of sphinxes, is a lasting petrifaction of the manners and customs of the people, and of the dominion of that mysterious hierarchy who sat in judgment over the dead, and who curbed the flights of imagination in architecture and in sculpture by inviolable regulations. The porticos and sculptures of Greece are evidences of the refinement of a nation, who responded to the works of its artists as to the creations of the dramatist and the reasoning of the philosopher; while the sumptuous edifices of the Romans speak of the pomp of imperial sway, and the slavery of subject states. The architecture of every country and of every age is vocal with the inmost workings of its creating mind: and it occupies the place of written history in points, which, though of the highest interest, historians have, for the most part, failed to touch. Every village church is a key to the history of the surrounding district; from its effigies, its sepulchral brasses, and its heraldic enrichments, the topographer and the genealogist may derive important data for the prosecution of researches into the history of a county, and of its principal inhabitants. The very age and body of the time are manifest in each feature, and in the minute details are related even the passions and the animosities of the different orders of the priesthood."* The writer of British history seldom versed in matters of art, has made little use of the means at his disposal in architecture and antiquity: ignorant of the skill, which the works of medieval artists evince, he has set forth the period anterior to the Reformation as entirely dark and illiterate. But the succeeding historian will fall short of his task unless he investigate the architecture of the country, and the numerous branches of art which that architecture called into play; and the number of those engaged in antiquarian topics is now so great, that the minister who, in emulation of Mons. Guizot, when Minister of Public Instruction in France, should do what he did for the examination and description of the antiquities of the country, could not but deserve well of all promoters of truthful representation, and greatly add to his political influence. The "Comité Historique des Arts et Monuments," founded by the French minister, has been for some time in active operation. Under the term "historical monuments" were included not only literary documents, but monuments of art; and it was proposed to publish, by degrees, a complete antiquarian survey of France, with descriptions and delineations of all its monuments. The commission has been divided into two comités—one for historical documents, and the other called the "Comité des Arts et Monuments." The latter has already issued several popular treatises on different branches of archæology, in the form of instructions for its numerous correspondents, as well as more lengthened and learned dissertations. The good thus effected has been great and permanent; it has already led to that active spirit of preservation with which France is actuated, and which the Government does every thing to second; and with the assistance of the "Société Française pour la Conservation des Monuments Historiques," will shortly remove at least the visible traces of that revolution to which the country owes the destruction of its monuments, as well as the alteration of its political institutions. The "Société Française" was established about nine years ago by that enlightened antiquary M. de Caumont, of Caen, in Normandy; and now, by its repeated

* Continued from page 172.

* *Vide* "Some Observations on propriety of style, particularly with reference to the modern adaptation of Gothic Architecture," a paper read at the Royal Institute of British Architects, June 26th, 1843, reported in the "Civil Engineer's Journal."

visits to different provinces, is rapidly extending the taste for preservation and research.

The British Association has not yet manifested the vigour of the French society; but, could the contending parties be reconciled, might be of equal service, and might be the means of influencing the Government in the direction pointed out. It can hardly be hoped, that an association of private individuals can ever do more than diffuse the salutary influence of good taste; and any active operations must be the work of a government. But the association might do good service through corresponding members and branch associations, to induce a higher feeling of the value of national antiquities, and often, by its mere representations, might prevent needless alterations. To procure drawings of existing remains, and more especially of such as might be in danger of demolition, should also be one of its main objects. It might also undertake such restorations as were desirable, and did not involve much expense,—as the removal of lath and plaster ceilings, which so often occasion the decay of roof timbers, and the cleaning of churches from whitewash. We would suggest, that in the latter work, the services of the younger members of the profession might be made available for superintendence with considerable advantage. The respect for the forms of Gothic architecture which, we are happy to say, exists amongst the rising generation of architects, would be likely to prevent the destruction of mouldings and ornaments, such as might otherwise occur in the process of clearing; and the payment of travelling expenses, with the opportunity of gaining much valuable knowledge not to be found in books, would be a sufficient recompense. At the same time, these persons might superintend the taking of casts of ornaments for a museum of national antiquities, a true British museum, such as we hope one day to see in England.

It is to be regretted, that no provision has been made in the buildings of the British Museum for a collection of national antiquities. Such a collection would be of higher value, and of far less expense, than the blocks of granite brought from Egypt at so much trouble and cost, which, however singular as curiosities, have no claim upon the delineator of national manners, and are all but valueless to the artist. It is for want of a receptacle for national antiquities, that we find so many pieces of pottery, carvings, and stained glass, in the hands of dealers, or in private collections; and there is no doubt, that if a proper building were set apart, many private collections would be presented to the public. Such museums exist on the continent, not only in the capitals, but in many provincial towns; and it is to be hoped that the measure now before parliament may end in the immediate establishment of such desirable institutions. We regret that a motion in the common council on the subject of a museum for the city of London did not even come to a discussion. The canopy from the tomb of John of Eltham in the collection a Strawberry-hill, a ceiling from the chamber a Crosby-hall, and considerable portions of St. Katherine's, Tower-hill, in the museum of a celebrated architect; original capitals from Wells Cathedral, in the window of a dealer; fragments from the Temple Church sold publicly, at the time of the late restoration; pieces of stained glass, and encaustic tiles innumerable, might have been restored to their proper positions, or have remained available for examination, had the existence of a national commission in the one case, and of a national museum in the other, preserved them from the comparative oblivion in which they now exist, to the serious detriment of the arts and history of the kingdom. As we have said, no restoration, however perfect, can be of the same value as the original fragment, therefore the latter should be preserved, at least, in some other *locale*.

We cannot too strongly urge the importance of exertions for the preservation of national antiquities of every description, and that those exertions should be immediate and vigorous: let chartered bodies forget their origin in another century, and lead the march of modern improvement, and let antiquaries forget their differences and re-form *one* association stronger than the last. In the present posture every day lessens the number of antiquarian remains, and implores more loudly for a protecting hand. The proceedings of the Central Committee of the Archæological Association shew, that destruction is still at work to a lamentable extent. Old halls and manor-houses disappear even more rapidly than ecclesiastical antiquities, and the same hall, which once we could not walk through without learning, at every step, something of the customs of our ancestors, has been despoiled of its old features, or divided into several residences:—

"The court with nettles, moats with cresses stored,
* * * * *
Like some lone chartreux stands the good old hall,
Silence without, and fasts within the wall;
No rafter'd roofs with dance and tabor sound,
No noontide bell invites the country round:
Tenants with sighs the smokeless towers survey,
And turn their unwilling steeds another way:
Benighted wanderers, the forest o'er,
Curse the saved candle and unopening door;
While the gaunt mastiff, growling at the gate,
Affrights the beggar whom he longs to eat."

The old halls of England are antiquities most interesting to every one, and expressions of regret at their disappearance are frequent. Can it be necessary that they should, in every case, be sacrificed to modern improvement?*

A national commission for the preservation of antiquities will fall short of its duties unless it secures, consistently with the same preservation, the free admission of the public to every cathedral and museum, which is public property, and endeavours to influence the possessors of private collections to throw their galleries open, on proper stipulations. That most interesting edifice, Hatfield House, is closed to the public, or was so last year; and many others have the like restrictions. That it is *not* the love of the British people to destroy works of art has now become as much an axiom as was the reverse, twenty years back; and while the love of education is on the increase, as now, there is no fear for the future.

E. H.

* We have hinted, previously, that Gothic buildings are not the only structures requiring the hand of preservation. Many of our most interesting examples of Italian architecture are in as bad a state.

BRICKS AND BRICKMAKING.

BY JOSEPH LOCKWOOD.

As my former short article on this matter appears to have attracted the attention of some of your readers, I feel justified in adding a few more remarks to those already made. I shall be glad if I succeed in having this matter fully discussed in your pages; for it is not a little singular that, in this scribbling age, the subject of brickmaking should have been passed over by most of the scientific writers of the day, or at least if they have not entirely passed it over, they have touched upon it so lightly, that little or no information is to be gathered from what they have written, with respect to the proper proportions of the materials required in brickmaking. There is considerable difficulty in the matter, and I am afraid it is not possible to clear up all the doubts which exist until a regular series of practical experiments has been carefully performed and the results registered. Brickmakers are as much, if indeed not more, divided on the niceties of their craft, than mere theorists themselves, for, as far as my experience goes, I think I may venture to assert that no two brickmakers agree as to the proper or best way of proportioning the different ingredients they use in the manufacture of their bricks.

This subject hitherto has not attracted that attention amongst architects and engineers that it ought to do; why such should be the case I am at a loss to discover, unless it be that it is thought unworthy of their consideration. I hope, however, the case is different now, and that the working brickmakers themselves will come forward and explain the motives for using their different materials in the way they now do, of course not forgetting in all cases to forward an exact description of the nature and quality of their different earths.

To take up the thread of my former article, I will observe that the quality of a good brick depends principally upon two things — the goodness of the materials, and the way in which they are used. The principal ingredients from which bricks are made are clay, marl, and loam, in all their variety, with the different admixture of breeze, chalk, sand, small coke, &c. The whole of these are reducible into their constituent elements, and by ascertaining what each of the above articles principally consists of, *per se*, we shall most likely be able to get some clue as to what ought to be the different proportion used of either the one or the other.

I cannot here, however, undertake to describe the chemical bases and relations which belong to each of the above articles, as that would make the present article of too great a length. But before any really correct results can be given, or general rules laid down, it will be necessary to examine each ingredient separately, to ascertion its various combinations, and neutralizing properties, when mixed or applied in any way to the other articles with which it has to be incorporated, when used in brickmaking.

It is impossible to give a general description of what in common language is called "clay," as it comprehends too many substances and qualities, which vary with local circumstances; most clays possess an earthy texture, and yield an argillaceous odour when handled; they differ as much in their plastic qualities as they do in colour. The principal ingredients of clay are silica and alumina, with a small quantity of lime, and occasionally of magnesia and alkali. Sometimes clay is red, yellow, blue, greenish blue, or mottled; it is often light, loose, and sandy, frequently heavy and greasy, and mostly friable when exposed to the action of the atmosphere. It varies in its bed even in the narrow limits of a field, some portion of the same field being much superior to the other, although it does not differ much in colour or appearance, but a practised hand and eye will readily detect the different qualities when examined closely.

If a clay contains an over proportion of sand, it will require the assistance of some dry substance to modify the action of the fire in the clamp, as the siliceous particles in the clay will fuse and run when under the action of great heat. In such case, it is plain that an increase in the quantity of chalk will be of great service if properly blended with the clay, because it will take up the fusing silica, and hold it together; a much less quantity of breeze also will be required, for as the materials used readily transmit heat from particle to particle, it will be easier to get them up to any required heat than when the substances do not so readily take the fire.

In round numbers, silica contains about 51 of oxygen in one hundred parts, and of alumina about 47, so that there is a large amount of oxygen combined in the elementary bases of clay, which will convince us of the necessity of not applying too strong a fire in the case where the silica is plentiful, for if we do, the certain result will be, that the bricks will "run" and be burnt into clinkers; in such case, therefore, my experience leads me to increase the chalk or similar "holding" bodies, and decrease to some extent the quantity of breeze mixed with the clay. The more alumina there is in the clay the better will be the brick if it is properly tempered by the introduction of sand and breeze, the one to burn it, the other to keep it from shrinking too much when under the action of the fire.

The best malm-bricks are made from a light kindly clay, which contains a free proportion of limestone. To get up good coloured, fine-grained bricks from this description of earth, it will be advisable to introduce both sand and breeze, the latter in larger proportion perhaps than with commoner clay, because the lime which is incorporated with the clay contains less oxygen in proportion than when the base contains a greater quantity of silica; added to which, the sulphur in the breeze or cinders combines during the process of combustion with the alumina, and brightens the colour by turning the clay more or less white, for it is well known, that when clay contains a large proportion of alumina, it has a tendency to turn white when under the action of fire.

From what has just been advanced, it would appear that the quality of the bricks may be very much varied by increasing or decreasing any of the different materials used in its manufacture, in some measure, if not principally, in consequence of the chemical property of the clay being materially changed by the addition or subtraction of one or other of them; if we add a larger quantity of breeze, for instance, to a clay overcharged with sand, a necessary consequence will be, that it will have a ten-

dency to run; if, on the other hand, we hold back the breeze when there is but little sand and a large proportion of alumina, the bricks will be brittle and porous for want of a flux to solidify them.

The colour of bricks appears to depend upon the proportion of the different materials mixed with the clay, and the time taken in burning them, as also the degree of heat used in the latter process. Chalk, when properly prepared and introduced into the material from which bricks are to be made, will have the effect of lightening the colour when burnt. It is very desirable in all cases where chalk is used that it should be washed, to free it from the foreign bodies mixed with it, and get rid of the pebbles, flints, and coarse sand which are intimately connected with it, for they will injure the quality of the brick if not removed. The flint, which is generally abundant in chalk, would do no harm if it was pulverised after being calcined, and then mixed with the clay; it would have the effect not only of whitening the bricks, but also of improving their quality with respect to durability. A superabundance of chalk in clay, tolerably free from siliceous sand, will cause the bricks to be brittle and spongy, especially if it is not carefully incorporated with the mass of the clay by grinding or kneading.

It will be readily gathered from what has been already stated that breeze or ashes constitute a very important element in the manufacture of bricks, for if carefully managed according to the quality of the clay, it may be made to produce very effective results both with reference to colour and quality. The reason why breeze appears to play such a useful part in the process of brickmaking is, I have reason to believe, in consequence of the quantity of sulphur which it generates, or gives out, when fixed in the clamp; added to which, it is the principal agent for vitrifying the siliceous particles in the clay, and combining them with the alumina and carbonate of lime, which form the basis of bricks. Most brickmakers prefer breeze or domestic ashes for their work when they can get them; if these are not readily obtained, they have resort to the small broken refuse coke, and sweepings from the gas-houses in the neighbourhood of London, and in rural districts small coal is used in place of the ashes.

The inferiority of coke ashes, when compared with breeze, appears to arise from the different mode in which these articles are made, the former being reduced from coal to coke in close retorts, free from the action of the external air during the process of combustion, while domestic ashes are produced from coals consumed in the open grate, fully exposed to a free current of air during the whole time of being in the fire; so that in the former case the sulphur, gas, &c., are driven off more perfectly than in the latter case; thus, although coke is more highly carbonized than breeze, it is less useful to the brickmaker than breeze, or domestic ashes.

That the sulphur contained in the ashes plays an important part in colouring bricks may, I think, be easily proved without entering into any thing like chemical detail; for if a brick clamp is carefully examined when opened, the course which the blue lambent flame of the sulphur has taken may be readily traced by the streaks or deposits of sulphury particles which it leaves on the bricks wherever it has played upon them; and further, also, by the fact that many bricks, though of good colour externally, are often more or less red within. I do not mean to assert that it is the sulphur alone which produces this colour, it is, no doubt, caused by the combination of the sulphur from the ashes with the iron contained in the earths used in the brick, which by the long-continued action of the fire is converted into a peroxide, and this we know gives various colours according to circumstances; it is a question, however, whether the colour would be so good if the sulphur were less abundant, or the brick subjected to the fire with a greater supply of air. Generally speaking, the bricks placed nearest the outside of a clamp are of different shades of red, which is either a consequence of being imperfectly burned, or else of the too free absorption of air; the former, however, is believed to be the real state of the case. The *rationale* of mixing the ashes with the clay is exactly similar to that of mixing the refuse coal from the mines with a large proportion of clay to make what are called *fire-balls*, which are much used by poor people in many parts of Wales and in the north of England: it economises fuel, and gives out greater heat than if the small coal were burnt in the open grate, for it evidently first undergoes a process of coking, and then of more perfect combustion; it is during the latter stage that the greatest heat is evolved; hence, therefore, these fire-balls are always put on a fire already well ignited, as they require a considerable degree of heat to set them going. I have often noticed that when these balls are taken from the fire, at their greatest heat just before they break, and allowed to cool gradually, they turn more or less white, which is also a property of all kinds of clay slate, and, as is well known, of pure alumina,—the chief basis of clay itself.

Breeze I consider to be much better for the purpose of brickmakers than small coal, although the latter in most cases would yield more sulphur than the former, but the effect is neutralized by gas which is evolved during the process of combustion in the clamp: bricks, therefore, made with small coal are not likely to be so good in colour as those made with ashes.

The effect of adding siliceous sand to clay, as has been already observed, is to hold the particles of the clay more strongly together when under the fire, as a natural tendency of pure clay when subject to great heat is to contract, and frequently in cooling to break up into cracks and flaws, which sand prevents, by fusing and combining itself intimately with the particles of the clay, so that on cooling they are prevented from separating by the powerful cohesive powers of the vitrified sand. Extremes, however, must be avoided, for if there should be an excess of sharp, siliceous sand, it will run into a shapeless mass when in a state of vitrifaction: if it should be burned too much in this state, it will form what are called clinkers, which are produced by excess of heat and sand.

From what has been stated, it will be perceived that the quality of the brick produced from any given quality of earth will depend upon the skill of the brickmaker, and the judgment he displays in assigning the proportions of the different ingredients he has to add to the clay; it is therefore impossible that any thing like a general rule can be laid down to govern all cases; it may, however, be observed that when the clay is heavy, the addition of chalk will lighten it: when it contains much sand, chalk will be necessary to take up the sand, and keep it from running; if, on the other hand, the earth should be of a marly nature, a little sand will be of service: with heavy earth a larger proportion of ashes will be required than when the soil is light and friable, as it will be more difficult to burn in the former case than in the latter.

With respect to the proper quantity of the different ingredients to be put into a given amount of clay, it may be again observed, that it will depend entirely upon the nature of the earth to be used in making the bricks; in the neighbourhood of London, I find most brickmakers use a different proportion, more indeed by chance than reason, some preferring one thing, some another; some use breeze entirely, while others prefer a mixture of breeze and small gas-house coke; some also would use more chalk than others even with the same description of earth. For myself, I think I should venture to point out the following mixtures, having more especial reference to the clay in the immediate neighbourhood of London, with which I am more familiar than any other. With good clay of average quality, being rather heavy than light, say

Clay.....65	or	Clay.....65	
Breeze....20		Breeze....15	
Chalk....15		Chalk....15	
		Sand....5	
100 Loads		100 Loads	

It will be seen that the quantity of breeze here used is rather less in proportion than most brickmakers generally employ in such case. With clays of a lighter nature, I should use

Clay.....75	or	Clay.....75	
Breeze....15		Breeze....15	
Chalk....7½		Chalk....10	
Sand.....2½			
100 Loads		100 Loads	

in all which cases, the average of the breeze is lighter than what brickmakers would use, because they are always anxious to burn their bricks as soon as possible; which, in my opinion, is the cause of an unnecessary amount of waste from clinkers and imperfectly burned bricks.

Here I must again be allowed to press upon all brickmakers the absolute necessity of allowing themselves more time if they really wish to make good durable bricks, for they may rest assured that it is scarcely possible to make them good even with the best materials unless they are properly incorporated by careful labour. It is a common practice in London brickfields for the clay after being dug from its bed, merely to be turned over, then it is covered with a layer of breeze or coke-dust for a few inches, and merely mixed together by passing them through the pug-mill, from whence the clay is carried to the moulder, to go through the remaining operations.

It is, however, generally admitted, that the clay ought to be well worked during the winter season, especially during the variable frosts, which tempers it, and renders it more tough and plastic, and in the end a far better material for the purpose of the builder, as the bricks will be all the stronger for the labour bestowed upon them, besides being more close and compact in grain. The action of the frost causes the water in the interstices of the humid clay to swell during the process of freezing, so that in the succeeding thaw it becomes friable and loose in texture, and consequently so much the more easy to be worked. I would, in all cases, recommend the clay and chalk to be well washed and cleaned before they are used, as that will improve both the appearance and quality of the brick beyond measure, and turn out articles worth looking at, good in colour, and tough in quality; quite different from the rotten, soft, and porous things now so commonly used, I am sorry to say, in situations where they ought never to be have been permitted.

Time and labour I am fully persuaded is of the very greatest importance in brickmaking, but as these ingredients are expensive, it is not likely that my solitary voice will be able to induce brickmakers to be more liberal in the use of them in the preparation and manufacture of their earths, as well as in the burning of their bricks in the clamps; if such was the case, there would not be such an over-abundance of imperfect bricks as now deluge the market, and damage and deface almost every new building in or near the metropolis.

I shall devote what little space now remains to your correspondent, who signs himself "An Early Subscriber," in your last number. Whatever may be the spirit in which his queries are put, I beg to assure him that if any of my opinions and statements are erroneous, I shall be most happy to be corrected, as I at least am anxious to elicit truth, and not to propagate error. If any of your readers should not approve of the opinions I have expressed, I hope they will at once explain their reasons for not doing so, and at the same time convey as much information on the matter as they possibly can, as this subject is one not yet very well developed, and is capable of great extension and improvement.

With respect to the first question of your correspondent, I can at present only refer him to what I have stated above and in my former letter. With respect to the second, I think he must be a very "young brickmaker" indeed if he cannot tell when his materials are properly mixed. If in taking up a shovelful of the prepared earth he can see streaks or layers of breeze, or sand, and lumps or layers of chalk, he may rest assured that his materials are far from being properly mixed, and ought to be immediately reground. If the earth is well prepared, it will be of a uniform colour throughout, and he will neither be able to detect breeze or chalk in a separate state; to be properly mixed, they must be thoroughly incorporated one with the other.

For want of time, I must pass over the first part of the third question, and say of the remainder that I believe the articles would certainly be better mixed together, and that I have no reason to fear that the burning qualities of the breeze would be damaged by being mixed with the clay for a few of the winter months.

Child's-place, Temple.

ALL SAINTS' DISTRICT CHURCH, STANWAY AND LEXDEN, NEAR COLCHESTER.

This church, of which an engraving has appeared in The Builder, was consecrated on the 8th instant by the Bishop of London, in the presence of nearly 500 persons, including the Venerable Archdeacon Burney, and about sixty of the clergy, and many influential families in the neighbourhood. At the conclusion of the ceremony, the architect, Mr. George Russell French, was introduced to the bishop, when his lordship was pleased to express to him his unqualified approbation of the sacred building, in which feeling the whole of the clergy present seemed to participate, declaring that it might be justly looked upon as a model of its kind. The pulpit, which projects from the wall, and which is accessible from the chancel and vestry, was especially an object of admiration, being of Caen stone, with highly enriched tracery panels, the cornices filled with the ball-flower and the four-leaved flower, and the lower spandrils having palm-branches and crowns carved thereon. The seats of the church are of oak, with low backs, the bench ends in the nave having buttresses, low doors marking the appropriated seats; the ends of the seats in the chancel and of the reading-desk have carved finials. The roofs are open to the ridges, shewing the entire construction of the timbers and boarding, which are stained.

The date of the architecture is that of the middle of the 14th century, when the Decorated style is considered to have reached its height of purity; a style, it is believed, as suitable to small country churches as to a vast cathedral, and admitting of great variety of detail: thus, in All Saints' Church there are not less than seven different patterns of windows, and four of gable crosses, yet all agreeing with each other. In order to make the period chosen appear with the more certainty, portraits (taken from their sculptured effigies) of Edward III., his queen Philippa, and their son, the Black Prince, are introduced among the heads which support the labels on the north side, as is that of Bishop Wykeham (at the east end), the great architect of the great Edward. The series of heads on the north side is chosen to illustrate that passage in the 148th Psalm, "Kings of the earth and all people, princes and all judges of the earth, young men and maidens, old men and children, praise the name of the Lord."

The font, of Caen stone (in which material all the external decorations of the church are executed), has been much admired; it is octagon, having on each side of the bowl varied tracery, within which are symbols of the Trinity, or the dove, the cross, or monograms of the Saviour's name; the pedestal is carved in tracery panels, and the ball-flower is introduced in the cornice.

The font is lined with lead, and has a drain. It is also raised on a platform of Chamberlain's encaustic tiles, the four Evangelists being at the corners, and the riser is formed of glazed tiles, which bear the text—IN : THE : NAME : OF : THE : FATHER : AND : OF : THE : SON : AND : OF THE : HOLY : GHOST. In a small transept (built for an organ) is a triangular gable-light filled with stained-glass, the gift of Mrs. John Papillon, and in the chancel is a single-light window, presented by the architect, having a ruby border enriched with the vine-leaf, and the text in old English letters, "Blessed are the poor in spirit, for theirs is the kingdom of heaven:" being the first of the beatitudes occurring in the gospel appointed for All Saints' day. A few points connected with this church have been thus dwelt upon to lead those who are designing ecclesiastical buildings to bestow some study upon their subject in connection with the particular era of architecture chosen for imitation, and thus the antiquary and man of taste will recognize the union of chronology with architecture, and the poorer frequenters of the sacred building will be led to take an interest in that church in which they and their children are henceforth to worship, and the contemplation of the sculptured stone and storied glass will raise their thoughts to that "house not made with hands, eternal in the heavens."

Restoration. — The beautiful tombs of the Black Prince, and King Henry IV., in Canterbury Cathedral are to be restored at the expense of the Government.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

At an ordinary meeting on Monday evening, the 14th instant, Mr. H. E. Kendall in the chair, Mr. H. R. Ricardo was elected an associate. The foreign secretary introduced Herr Kühnell, architect of Berlin, who has visited England to study our gas establishments, with reference to the general introduction of gas-lights throughout Berlin. Mr. Donaldson took occasion to state to the meeting, that a number of gentlemen who appreciated the services conferred on the profession by Mr. John Britton contemplated presenting to that gentleman some testimonial of their esteem, and he invited the co-operation of all who thought with them.

Mr. Godwin said, that a preliminary meeting would be called next week; that *pro tempore* he had been requested to act as hon. secretary in conjunction with Mr. Peter Cunningham, and would gladly receive the names of any gentlemen willing to be on the committee. A letter was read from Mr. Wright, associate, inclosing a copy of an advertisement for plans, specifications, and estimate for building a church in Gloucester; wherein the committee offered no premium, would not bind themselves to adopt the best, and in a correspondence, which was also sent, would not say that if a design were selected, the architect would be employed to carry it out. The meeting seemed unanimously of opinion, that the force of impudence could no further go. How much longer architects will encourage the repetition of such insults remains to be seen.

The hon. secretary then read a paper on the formation of a museum of casts, illustrative of the architecture of antiquity and of the middle ages, by Mr. C. H. Wilson, director of the Government School of Design. The writer considered that the extent of the assistance which Government should give to art was an important inquiry. He urged the necessity of having collections of fine models, but cautioned students against a disposition to copy slavishly, now apparent. The Germans, much as had been said of their return to ancient examples, did not imitate so closely as we did; they did not think it necessary, when adopting a particular style, to restrict themselves to the immature details, should it have them. In this he agreed, and thought that, instead of copying dislocated saints, it would be better to introduce correct drawing, and use our improved knowledge. In an architectural museum he should like to see the models take the position in which they properly were; he would have the portico of a building set up full size. He commented on the difficulty of obtaining architectural casts in England, and urged the establishment of a central casting establishment, whence museums and galleries might at once be supplied cheaply. In France this was the case, and the greatest advantages resulted.

After the paper had been read, Mr. Donaldson made some remarks on the points which it had suggested, and especially dwelt on the little interest in such subjects exhibited by English Governments as compared with those of other countries. Amongst other instances, the French had recently sent to Bruges to obtain casts of a very fine chimney-piece, which is in one of the public buildings there. We really did nothing. Look at the ancient monuments in Westminster Abbey, they were rapidly decaying, and even the royal family, who might be supposed to feel especially interested in them, seemed quite careless about the matter. The importance of models was very great; more might be learnt in a museum in an hour than by reading for a day. The question of cost should not be considered,—the education of a people should not be measured by money.

Relative to casts from Gothic buildings, it was mentioned that a modeller had been recently sent into the country by our Government, with authority to take casts from all public buildings, for assistance in the completion of the Houses of Parliament.

An Anti-inclosure Association is talked of, and would probably be serviceable. Its claims on public attention should, however, be put forward in milder tones than those of the circular issued by Mr. Henry Dowell Griffiths.

FREEMASONS OF THE CHURCH.

April 8th.—Mr. James Finn, in the chair. Mr. W. G. Rogers exhibited a series of exquisite carvings in oak, by Grinling Gibbons, consisting of books, flowers, medals, &c., from the pulpit of St. Clements Dane. Also a very early carved boss from Winchester Cathedral, and an Italian bronze of the sixteenth century.

A lecture was then delivered by Mr. William Papineau, on architectural chemistry. After regretting the extraordinary apathy the architectural profession had shewn in the acquirement of the collateral sciences bearing upon architecture, the lecturer proceeded to enforce the great importance of their cultivation to the advancement and exaltation of the profession, adducing as a parallel case, the rise of the medical profession from the debased and empirical age of the barber-surgeons to its present high standing and repute, solely by the appointment of standard qualifications in its members, and the gradual extension and elaboration of the circle of knowledge. He dwelt on the close connection of many of these sciences with the theory of architecture, and the important advantages which an intimate knowledge of them must confer on the practical part of the profession.

After strongly urging the importance of the principle laid down and the great good which must eventually accrue to the profession from a more extended and scientific course of study than the ordinary routine through which the majority at present passed, and particularly instancing chemistry as a science at once eminently useful to, and greatly if not entirely neglected by the architect, he proceeded to give an introductory view of the properties of matter and laws of combination, at the same time regretting that the short space of two lectures, necessarily allotted to him, would prevent his entering so fully into details as he could desire, which deficiency he trusted to make good by practical papers contributed from time to time, and by the systematic courses which were in preparation.

ARTISTICAL.

In a letter recently received from Rome, Mr. Gibson, R.A., states that he is now modelling the statue of the Queen, and that it will be two years before it is finished. Our distinguished countryman is also engaged on a repetition of his statue of "The Hunter," for Lord Yarborough.——Thorwaldsen's statue of Byron, which has occupied a cellar in the London Docks for several years past, in consequence of the refusal of the Dean and Chapter of Westminster to admit it into the Abbey, is destined for the library of Trinity College, Cambridge.——Mr. Lough's colossal figure of her Majesty, for the Royal Exchange, is completed, and is about to be raised to its place.——The exhibition of the New Society of Painters in Water Colours will be opened to the public on Monday.——M. Alost, sent to this country by the King of the French to obtain the portraits of all the members of the London Corporation who attended his Majesty with the address at Windsor, for the purpose of painting a large picture commemorative of it for Versailles, has completed the sketches. The likeness in above thirty of them which we have seen is admirable. A duplicate of the picture will be presented by the king to the city, and be hung in the Guildhall.——The annual meeting of the Art-Union of London will be held on Tuesday next, the 22nd, in Drury-lane Theatre, to receive the committee's report and distribute the amount subscribed for the purchase of works of art. The Duke of Cambridge will take the chair at twelve. We shall give a full report of the proceedings in our next number.

St. Paul's Cathedral.—The porticoes of the western entrance of this splendid cathedral are about to undergo a thorough cleansing and scraping, with a view to removing the incrustation that has settled on the stone work, arising from smoke and dirt. On Tuesday week the scaffolding under the lower portico was erected, and the workmen commenced their operations; it has not, however, yet been determined whether the whole of the western front, as also the other outer portions of the building, will be scraped and cleansed, the lower part being tried first by way of experiment.

WORKS IN THE PROVINCES.

On Tuesday, the 1st instant, at noon, the ceremony took place of laying, not the foundation, but a main corner-stone of the new church, at South Milford, a township in the parish of Sherburn. The church will be in the early-pointed style of architecture, and consist of a nave 52 feet by 27½ feet; chancel 28½ feet by 18 feet; octagonal vestry on north side of the latter, and porches on the north side and west end of the former; the gable to the west is surmounted by a bell turret, which, the site being in a central and elevated part, will supply that feature so essential to an English village. The cost of the fabric will rather exceed 1,400*l*. The accommodation provided will be for 240 adults and 60 children. The architect is Mr. George Fowler Jones, of York. The Rev. Mr. Matthews, the Vicar of Sherburn, who officiated in laying the stone, stated in his address that the patrons of the benefice and others proposed to raise a sufficient sum for the construction of a house for a resident minister, and a school-room for the children. The church will be dedicated to the Virgin Mary.

On Easter Monday, the ceremony of laying the foundation-stone of a new church took place at Woodford, a village pleasantly situated in the Avon valley, about midway between Salisbury and Amesbury. The ponderous corner stone, forming the south-east angle of the church, was laid with due ceremony by Mrs. Duke, supported by Archdeacon Lear. The tower is the only part left remaining of the old church, the building having become very much out of repair through lapse of time. The new church will have an additional aisle, there being one only on the south side before. Mr. Wyatt is the architect.

At Eastover, near Bridgwater, the new church, to be dedicated to St. John, is nearly finished, and will be consecrated in a short time by the Bishop of Salisbury. It is designed in the early English style, and substantially built of stone. The south side of the church has a deeply-recessed and ornamented doorway. The whole of the windows are completed, and consist of richly-stained glass. The roof and seats are of beautiful carved work. This is the only church in the town or neighbourhood where every sitting will be free, there being accommodation for about 500.

The railway works at Ely are proceeding with great rapidity. Near the bridge above one hundred labourers and artisans are actually employed. The station will be situated on the south side of the bridge, and is to be built of wood; but, upon some future occasion, it will be removed for an elegant structure of stone. The report that the company have given the contractors an extra month to finish the line from Brandon to London is untrue. It will be fully completed by July 1st.

At the West-Riding Sessions at Pontefract, held last week, a motion was made by Mr. Hall to authorize the inhabitants of Wetherby to take down the old Court-house, which was now of no use to the Riding. A memorial had been presented last year, which was referred to a committee; and that committee had reported in favour of the request. It appeared that the inhabitants had raised by subscription 700*l*. to which a gentleman promised to add another 100*l*; and the object required was to be allowed to take down the old Court-house, the property of the Riding, throw the site thereof to the Market-place, and to erect some public buildings thereupon. After some discussion by the magistrates, it was agreed that the prayer of the petitioners be granted, on an arrangement being entered into by the parties for allowing the use of a room over the building for the West-Riding magistrates, as may be satisfactory to the committee already appointed.

The Scott Monument at Edinburgh, having been most satisfactorily completed by Mr. Lind, the builder, a public dinner was last week given to that gentleman, Alexander Robertson, Esq., of Eldin, in the chair.

At Windsor, St. George's Chapel has just been embellished with two additional stained-glass windows, executed by Mr. Willement. These windows are in the north aisle of the chapel, immediately under the Royal closet, and facing the back of the tomb of King Edward the Fourth, and his Queen, Elizabeth Wydville. In the two centre compartments of one of the windows are full-length figures of Edward and his queen, attired in their robes of state, in devotional attitude, over the sacred volume. The two outer compartments contain the armorial bearings of that monarch, and also of his queen. The other new window adjoining is to be called the "Rutland Window," and contains the arms of Ann, daughter of Richard Duke of York, Thomas Earl of Rutland, Richard Duke of York, Richard Earl of Cambridge, and Ann, daughter of Thomas St. Ledger. Mr. Willement has also filled up the three compartments left in one of the new windows fronting the royal closet with the arms of the King of the French, the Duke Saxe Coburg and Gotha, and Philip Earl de Grey, the three newly installed knights of the most honourable and noble Order of the Garter. The fountain decided upon by the Board of Green Cloth, to be placed in the new Royal gardens at Windsor, is now complete, and was played for the first time on Friday last, before Sir Thomas Marrables, who attended on the part of the board, and approved of it.

The committee for managing the erection of new churches within the borough of Kingston-upon-Hull have made the requisite arrangements for immediately proceeding with the third, in the recently endowed district of St. Paul's. Plans and specifications have been advertised for, and it is confidently anticipated that the additional means required for carrying them into effect will be readily contributed, and insure an early completion of the work.

Lord Lyttleton has addressed a circular to the gentry of the neighbourhood of Stourbridge, in the name of a committee of gentlemen formed for the purpose of extending hospital accommodation to the district.

The *Gloucestershire Chronicle* states that his Royal Highness Prince Albert is expected to lay the foundation-stone of the new Agricultural College at Cirencester.

At Kirkaldy, in Scotland, a bonded warehouse is now in the course of erection on the ground immediately on the east side of the harbour.

A new church, now fast approaching to completion at Sowton, near Exeter, has been built, at a cost of 3,000*l*., by the munificence of John Garratt, Esq., of Bishop's-court. Mr. Garratt was one of the Aldermen of London for many years, and highly-respected in the metropolis. He accumulated a handsome competency by activity and integrity in mercantile and commercial pursuits, and retired into Devonshire, where he has made large purchases of landed property, and where, as a country gentlemen, he has acquired the general esteem of the nobility, gentry, and all classes. He possesses a large portion of the parish of Sowton.

The Hon. H. Herbert, son of the Earl of Carnarvon, is building a new house at Street, in the parish of Blackawton, Devonshire.

THE LONSDALE MEMORIAL.

DURABILITY OF MARBLE.

We stated in our impression of the 8th ult., that a marble statue of the late Earl of Lonsdale was about to be erected in the county of Cumberland. Since then the committee appointed to carry out the design have determined to entrust the execution of it to Mr. M. L. Watson, who is, we believe, a native of Cumberland. The following letter from the artist has been addressed to the treasurer:—

"Dear Sir,—Permit me to submit to you for the consideration of the committee a few remarks respecting the durability of marbles.

The purest marbles are those of Tuscany. They are admirably fitted for works of art, and universally adopted in monuments and statues intended to be placed in the interiors of churches and public institutions. Not one of these will bear exposure to the atmosphere in our northern climate.

The marble of Sicily is, however, well calculated for statues and monuments intended to be erected in the open air. The triumphal arch in St. James's-park, embellished with figures and relievi from designs by Flaxman, and executed by Sir Richard Westmacott, is entirely of Sicilian marble. The colossal statues of our Saviour and the Apostles, by Thorwalsden, erected at Copenhagen, are of the same material; and you may rest assured that the durability of this marble was satisfactorily ascertained before the sanction of the respective governments could be obtained for the adoption of it.

A colossal statue placed on a truncated column or lofty pedestal would be imposing, and endure for many centuries. The amount subscribed is nearly sufficient to defray the entire cost. There is not a marble statue in either Cumberland or Westmoreland. I cannot express to you how deeply I shall regret that any thing less important than a colossal statue in marble should be determined on as an appropriate monument to the late Earl of Lonsdale.

The subscribers may desire, however, to erect a work, still more colossal, executed in native stone, which is much less durable than Sicilian marble. Should this be resolved on, the statue 15 feet in height might be completed for the funds you have on hand.

It may be long ere so favourable an opportunity will present itself for the encouragement of sculpture in our native county. I cannot forbear expressing a hope that the arts may not be forgotten by those who have so liberally subscribed towards a memorial intended to record the virtues and eminent services of the lamented Earl of Lonsdale."

THE WATERMEN'S FLOATING PIER AT GREENWICH.

A cause involving the legality of this pier was argued at Kingston on the 31st ultimo, before Lord Chief Justice Denman and a special jury. The plaintiffs were Sir Richard Dobson, the deputy inspector of hospitals, and a gentleman named Sutton; the defendant, Blackmore, was superintendent of the pier in question.

From the statement of Mr. Serjeant Channel, it appeared that the plaintiffs had purchased seven houses, some of which abutted upon the river, and others were close to it, and to the whole of which there had always been free access from the water, until the persons with whom the defendant was connected thought proper to build this pier, the effect of which was to prevent all access, and no boats or barges could get to them. The proceeding upon which the present action was founded took place in 1842, at which period the plaintiffs were desirous of repairing some of the houses which they had just purchased, and two barges containing the necessary materials were sent for that purpose. The watermen, however, refused to let them come in, and the result was that one of the barges was swamped and sunk, and the other was compelled to go a considerable distance up the river to unload, thus entailing a good deal of additional expense in performing the repairs.

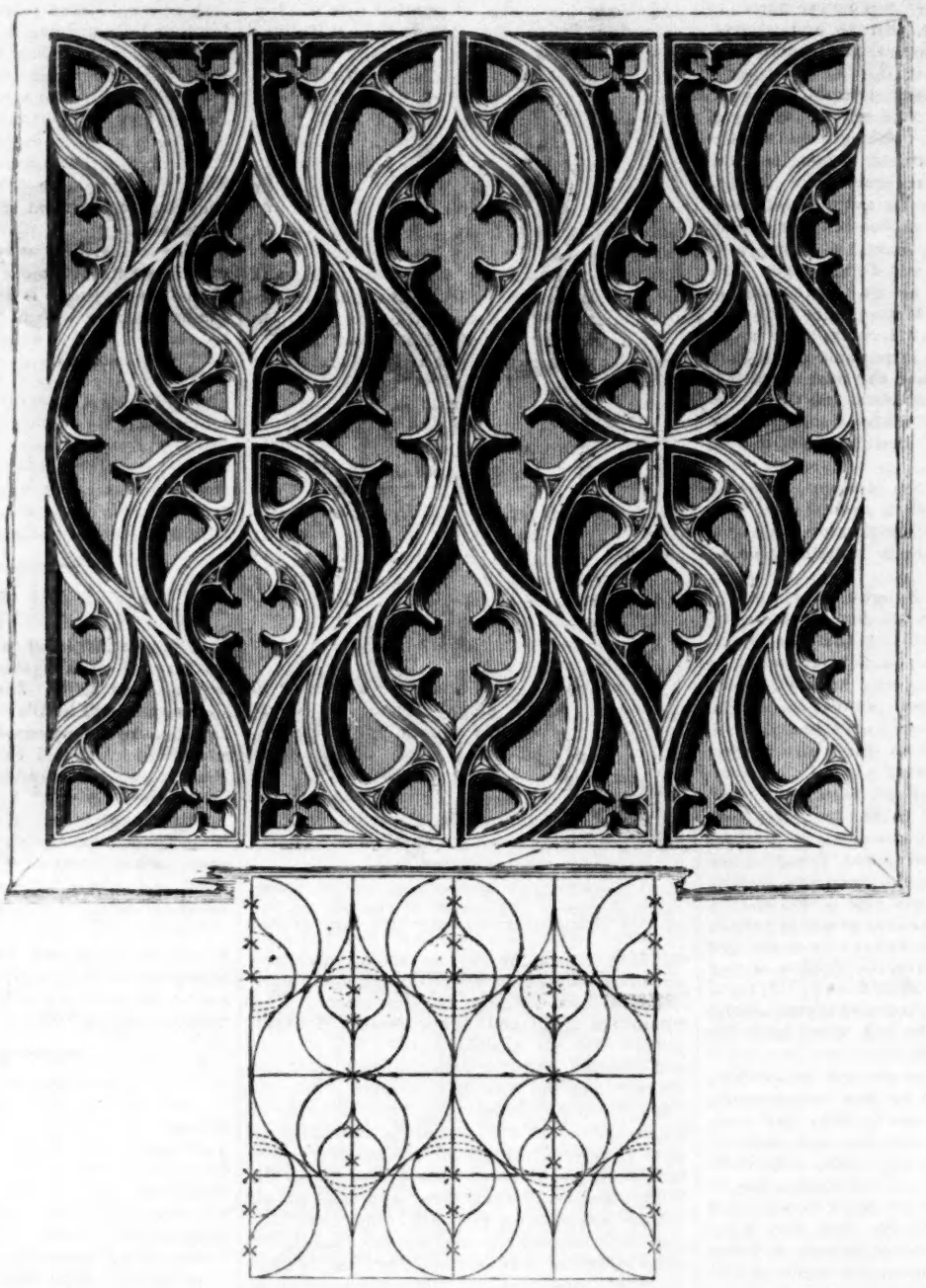
Mr. Serjeant Shee, in addressing the jury on behalf of the defendant, said that they had to decide a dispute between a stone pier erected by Act of Parliament, and which belonged to the plaintiffs, and a small floating pier, which had been erected by a body of men who, finding their former means of obtaining a livelihood entirely taken away from them by the use of steam, had been compelled, in their own defence, to have boats of their own, and to erect a pier for the accommodation of the passengers who travelled by them, hoping thereby to be enabled to support themselves and families. The object of the plaintiffs, who were the proprietors of a rival pier, was to thwart and oppose them in this attempt by every means in their power. He concluded by contending that no real obstruction had been made out against the pier, and that the defendant was entitled to a verdict.

The Lord Chief Justice in summing up observed, that it ought not to make any difference to the jury if they should be of opinion that the plaintiffs had purchased the property in question solely with a view to the present proceeding. The only question for them to decide was, whether or not the free course of the water may have been obstructed, and whether the defendant was the party liable for that obstruction.

The jury, after deliberating for a few minutes, returned a verdict for the plaintiffs—damages 1s.

The effect of this verdict, if it is not set aside, will, of course, be to do away with the floating pier altogether.

GEOMETRIC TRACERY FROM CARLISLE CATHEDRAL.



GEOMETRIC TRACERY FROM CARLISLE CATHEDRAL.

The accompanying engraving, from a drawing by Mr. R. W. Billings, represents one of a series of panels from the wooden screens in Carlisle Cathedral. This particular example forms part of St. Catherine's Chapel, in the south transept, and still remains in the cathedral; but many similar specimens have been removed by barbarous churchwardens, and are to be found scattered about the country. Mr. Billings published a small volume some time ago illustrative of this paneling, to which we alluded in our notice of the author's work on the tracery of Brancepeth Church, Durham, p. 104, *ante*. Some of the panels which he gave are enshrined at Carlton Hall, near Penrith, and at Featherstone Castle, Northumberland. Apart from their elegance, they are valuable as proving that the Gothic architects designed on system. Although the result is very different, it is found that the majority of these panels were formed on the same ground-work, namely, on the division of a square into four parts each way, or sixteen squares. Upon the lines of these squares, as shewn by the diagram below the example we have given, the centres of all the curves are worked, and upon such a simple calculation of parts as to render their construction perfectly easy. It is singular to observe how great an alteration in the general features is effected by a very slight deviation in the curves.

In the leading curves of these examples, Mr. Billings remarks, nothing can exceed their accuracy of projection; but all the foils contained within are worked by hand. They are ascribed to the time of Prior Thomas Gondibour, who presided over the cathedral from 1484 to 1507. His initials were cut in the tracery of a panel in the door to the chapel, but this was unfortunately broken out and carried away a few years ago.

The engraving is one-third the real size of the panel represented.

THE HISTORY OF A COMPETITION.

"If the history of competitions were written, its details would shew an extent of rascality astounding to architects themselves."—The Builder, p. 52, *ante*.

Sir,—In the *Manchester Guardian and Courier* newspapers of the 28th of September last, there appeared the following advertisement:—"To architects.—St. Simon's Church, Salford.—Persons desirous of sending in plans and specifications for building the above church are requested to forward the same as soon as possible to Huitson Dearman, Esq., treasurer to the committee, Springfield-lane, Salford. All plans to be in not later than the 1st of October." In answer to this, some twenty or thirty architects wrote for particulars, and amongst them was one, who from the answer received, inserted in The Builder of the 5th of October, a paragraph headed "Increase of honour and profit to Architects;" now, although it is evident from future proceedings, and even from the general tenor of the particulars, that your correspondent had misunderstood the intent of the committee, yet I can assure him, it is much better for him that he did do so, than if he had entered into competition with others for the building of the church at the rate of 5 per cent. on the whole amount; however, to return. The 11th of October at length arrived, and with it some fifty or sixty plans from architects in the towns of Manchester, Sheffield, Liverpool, and London. Now, in the conditions as framed by the committee (who doubtless were all honourable men), was a stipulation to the effect, that the cost was not to exceed the sum of 3,000*l.*, and further, that if any design which might be chosen, should exceed that sum, the committee should be at liberty to reject it altogether; this in itself, was perfectly right, but let us see how far this committee acted up to their conditions.

Some of the designs bore names, and some mottoes, about which there was no express stipulation, and amongst the latter was one bearing the signature of "Ignatius." A few days passed on, and it began to be talked of that "Ignatius" would be the successful candidate, but who "Ignatius" was, at present seemed a mystery; however, time, as it mostly does all things, unravelled this, and the design was said to be that of two young architects

(Messrs. B. and P.) of Manbester The competition now began to wear a settled aspect, and a few of the architects sent for their plans back, but the answer in all cases was that it was not determined. The designers of the plans bearing "Ignatius" were now called in to make an approximate estimate, and to give a guarantee to the effect that it should be completed for the sum of 3,000*l.* The plans too were shewn to many friends, amongst whom happened to be one or two having a practical knowledge of building, who stoutly declared that it was ridiculous to imagine that such a design could be erected for 3,000*l.* However, the architects made an estimate, and shewed that it could be finished for about 3,250*l.*, this was pretty near the mark, and certainly not to be objected to. Upon this the committee sent the design to the London commissioners (to whom they were applying for a grant); when, to the committee's astonishment, in a few days word came down that the walls for the aisles in the nave were but 14 inches thick, or thereabouts, and that those in the clerestory were somewhat less than that; but the committee, still determined not to lose a chance of having the pretty picture converted into a real church of stone, returned word that they themselves would bear the extra expense of the thickening of the walls, thus increasing the outlay to something about 3,500*l.*

The committee now thought all was pretty safe, when down came another objection in the form of a letter, stating that the tower with the supports it then had would actually fall before it was half way up; in short, objection upon objection was poured in, whilst the committee as obstinately tried to get rid of them; but, alas! all was in vain, for the commissioners at last resolved that if the committee attempted the design, they would not aid them. The hopes of "Ignatius" were now at an end, and it was left for the committee to choose another from the many designs they had received, and which (though two months had now elapsed) they still kept possession of; but it seemed they still had the pretty picture in their eye, for none of the forty or more designs would suit them: however, it appeared one or two of the committee had a friend (Mr. L. of Manchester), perhaps a particular friend, among the competitors, but who had, alas! made his plans too plain, though doubtless they were honest, for his could be erected for 3,000*l.*; but then the church was not handsome enough, so what was to be done? Why this very honourable committee agreed, and actually sent for this friend, and gave him instructions to draw out a fresh set of drawings; this he did, and produced what we are told will be a very handsome church: but then may it not well be so, when he comes forward and says this design cannot be completed under 3,500*l.* Of course the committee are very sorry for that, but then he is a friend, and, what is more, he has produced a more handsome design than any sent in (because, he had 500*l.* more to work upon), so he must be the architect, and the church must proceed. Now let us take a glance at the private doings of this committee, and see how the competition has been carried on, and then we will leave these honourable men to their fate, and let us hope to public indignation too.

When first the building of this church was in its infancy, which was some two or three months before it was advertised, a certain minister (the Rev. H. Stowell) introduced to the intended minister of the new church, and one of the committee (the Rev. E. Harper), an architect (Mr. Shellard, of King-street), one whom no doubt he had every wish to see as the architect for the new building; however, I believe the minister there and then informed him that ultimately it would be a competition; but at the same time said, that if he would send them in a set of plans, the committee would look at them, and no doubt he should have interest enough to serve him. In a short time from that, a set of drawings was duly received, and pretty well looked over, but as the day of competition drew near, another set was also received from the same person, and took its place among the rest (this set was got up entirely under the immediate superintendence of the minister). Now these proceedings had been whispered abroad, and reports reached the ears of the committee back again, that it was but a sham competition, and that in fact, Mr. S. was the architect and already appointed; by which doings, many were deterred from sending in altogether. The committee again and again assured doubtful parties that all should have a fair chance, and amongst the committee were a few who did not like the idea of this same gentleman (Mr. S.) being thrust upon them whether or no, so the result was, that at the first meeting, it was moved, seconded, and carried (three only voting against it), that the plans of Mr. S. be taken away altogether: and thus was his chance lost entirely through being misled by one of themselves, his second plans not even looked at, but at once rejected. Again, in their conditions, all plans were to be in by the 11th of October, yet even for more than a fortnight after, plans were still being received; and yet further, to the regret of several of the committee, there were no plans in from the office of two architects (Starkey and Cuffley, Cross-street, partners), who had built a very pretty church in the town (they had been deterred by the alarm that it was a false competition), so what did this honourable committee do even a fortnight or more after the day mentioned in the stipulations, but call at the said office, and solicit a set of drawings; whether they got them, or not, I am not sure, but I believe they did. And still after all not one of the designs sent in has been chosen; the committee have wasted the money of the subscribers too, for they have paid "Ignatius" between 10*l.* and 20*l.* for after trouble, and besides this report speaks of a bill of 50*l.* by way of a charge, which has been presented to them by their first friend, Mr. L.

Such is a pure and ungarnished history of the competition of St. Simon's Church, a competition in every way disgraceful to the committee; a committee appointed to inquire into the merits and demerits of some forty designs or more, each of which will have cost to the designers from 20*l.* to 50*l.* each, and lest it may be said that the grapes are sour, I beg to subscribe myself not an architect, but simply Yours obediently,

A Looker-on.

The church is now proceeding under the superintendence of the friend named, Mr. Lane, of Manchester, and the committee are now afraid it will come to 4000*l.*, for the architect's estimate for foundations was 180*l.*, and they are costing 230*l.*

ANCIENT IRONWORK.

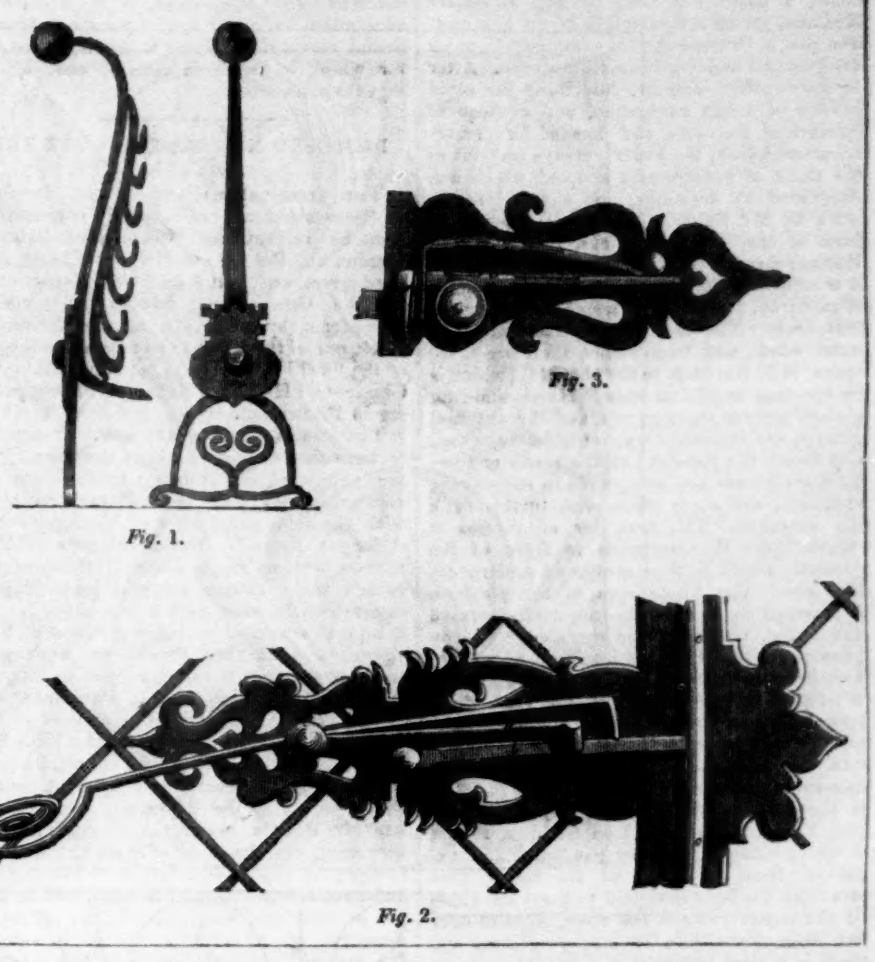


Fig. 1.

Fig. 3.

Fig. 2.

Fig. 1 gives the front and side view of an ancient fire-dog at an old hospital at Sandwich, in Kent. The date is about the time of James I. It is a very good example; the hook to support the spit for cooking is seldom seen attached.

Figs. 2 and 3 represent casement-fastenings.

In old buildings the iron casement-fastenings were often very much enriched; they were sometimes so large as to reach quite across the frame, and sometimes they formed part of the frame itself. The larger of these examples here given is of the latter description. The old lead-light casements opening in the centre, were very difficult to close effectually, so as to keep out the wet; that the inconvenience must have been felt as fully in former times as it would be at present, our larger example is proof. It is a very ingenious contrivance for securely closing the two halves of the sash-frame. The rod *c c*, attached to the end of one-half the frame, and turned by the handle *b*, has a buckle on the top and bottom, which falls on the other half of the iron frame of the sash. The spring-latch, as by a leverage action, closely presses in the handle *b*, and keeps the sash effectually tight, preventing any shaking from the wind, &c.

It may be here observed that the iron sash-frames in the state apartments at Holland House, Kensington (a most interesting structure) fastened on the same principle, are models of what may be done with these very inconvenient parts of old structures.

The two examples given are probably of about the period of Charles I. Such examples are seldom met with, though in some parts of the country they are numerous; at Saffron Walden, in Essex, for example, nearly every cottage has specimens, as ornamental as our largest examples, but they are merely spring-latches.

R.

CAST-IRON PIER AT GRAVESEND.

At the Institution of Civil Engineers, on April the 8th, Sir John Rennie, President, in the chair, a paper was read by Mr. J. Baldry Redman, giving a description of the new cast-iron pier at Gravesend, just completed from his designs, and under his superintendence. After an introductory memoir, describing the rapid growth of steam navigation, and consequent increase of the town, and demand for greater accommodation, the paper gave an account of the mode of construction adopted, which was illustrated by drawings, and a model of the work by Mr. Salter. The pier is situated in front of the Terrace-gardens, in a line with Harmer-street. The length is 250 feet, and it is supported upon twenty-two Doric columns of cast-iron, 28 feet long, weighing nearly ten tons each. The first tier is situate at high-water mark, and from thence there are three spans, of 50 feet each, to the pier-head, which is 90 feet long by 30 feet wide. Horizontal iron girders support the platform, and the external girders are inclosed by an entablature, which also forms the parapet; at the south end are solid abutments and wing-walls to support the approach, and stone offices with turrets flank the entrance. The first tier of girders is carried over the esplanade in front of the gardens, which is thus continued underneath the pier. The whole area of the platform is covered by a wrought-iron roof, boarded and slated, and supported upon coupled iron pilasters, with corrugated iron panels between, and the sides can be inclosed at will by shutters; sky-lights are introduced in the roof. The approach from the river is by a double flight of steps with landings to suit all states of the tide. A powerful light is exhibited from a cast-iron lighthouse, surmounting the junction of the roofs at the pier-head, which is supported upon a system of iron trussing, 43 feet in span; octagonal copper gas-lamps are suspended from the apex of the roof. This structure has been designed to meet the views of the conservators of the river, so as to offer but little obstruction to the navigation, and there is a clear headway of 8 feet underneath at high-water spring-tides. The comfort and convenience of passengers by steamers have been also materially consulted.

The paper described in detail the method adopted in getting in the foundations which was one of the chief features of the paper, as the method was novel, viz., by sinking cast-iron cylinders to a depth varying from 9 feet to 14 feet below the level of low-water mark of spring-tides, and keeping their tops always raised above high-water.

The ground was excavated from within them, and they were fitted with solid work to the level of low-water mark, where the columns were bedded on the stone bases; the work occupied two years in its construction, and has been since Easter Monday, open to the public.

A very ingenious machine was exhibited for making with perfect accuracy artificial teeth, gums, and palates: it is the invention of Mr. Tomes, who described its action and demonstrated its capabilities. A plaster of Paris cast of the gums having been obtained, a peculiar moulding composition, softened by heat, is pressed upon the cast and allowed to cool in that situation, it is then removed and reduced to the shape of the intended teeth, and if on trial this composition model is found to fit the mouth accurately, it is placed in the face-plate of the machine, and a perfect copy is obtained by the mechanical action of the revolving cutter or tool. The machine consists of three slides; two are placed vertically and move in two directions horizontally and vertically, but each in the vertical plane. Upon these slides is a plate of iron, to which is fixed the composition model and the substance in which the copy is to be produced; the two, therefore, partake of equal motion. The third slide is placed horizontally, and admits of horizontal motion only, but at right angles with the motions of the perpendicular slides. Upon this slide a tracer with a blunt point is permanently fixed, and parallel with it is a revolving cutting point or drill, by the three sliding motions the tracer is made to pass over the surface to be copied, whilst the drill is constrained to describe an exactly similar surface in the substance placed before it, and by the rapidity of its motion joined to the delicacy of its action, copies with accuracy the most minute projections on the cast. In the specimen exhibited the finest filaments were accurately delineated on the ivory carving, and the machine was pronounced to be capable of adaptation to many other purposes beyond dental carving, for which it was designed and for which it has been entirely used by the ingenious inventor.

PROPOSED NEW BRIDGE OVER THE MENAI.

The great national improvement involved in the establishment of a speedy communication by railway and steam-ships between London and Dublin, *viâ* Holyhead, being now in progress, and, as it is understood, sanctioned by the Government, powers for crossing the Menai by a bridge at the Britannia Rock, one of the wildest and most critical parts of the Swellies, have been introduced into the Chester and Holyhead Railway Bill now pending in Parliament.

The idea is by no means new. It appears to have first originated about the year 1783; the expressed object being to facilitate the communication with Ireland, and do away with the delay and danger of the ferry called "Bangor Ferry." The inhabitants of Carnarvonshire, more particularly those of the county town (where the principal shipping interests of the coast were then located, but not as now incorporated by Act of Parliament) took alarm at what they considered a dangerous obstruction to the navigation of the Straits, and a bill being brought into Parliament for the purpose, it was strenuously opposed in the year 1784-5, and finally defeated in 1786. The question, however, was not set at rest, but still continued to be occasionally agitated, and in 1801 a survey of the Straits was made by the late Mr. Rennie, under the direction of Government, with the object of crossing them by a bridge; he reported in favour of the project, and proposed two plans of bridges, both arched and of cast-iron, and supported by pillars of masonry; one of a single arch at the side of the present suspension bridge; the other of three arches at the Swelly, Benlas, and Welltog Rocks; and these plans being submitted to Mr. Jessop, an engineer of great celebrity, and to Dr. Hutton, the Royal Professor at Woolwich, were approved of by them.

Notwithstanding the reports of the most scientific men of their day, the Government never carried into effect their suggestions of arched bridges on piers of masonry. The Chester and Holyhead Railway company now propose to carry their road over the Straits at the Britannia Rock, a spot never proposed by former engineers, and by a bridge of two cast-iron arches, supported on piers of masonry, founded at low-water mark, of the following dimensions:—

Span of the arches from pier to pier....	360 ft.
Height of ditto from high-water to the crown of the arches	105
Height from high-water to the springs of the arches	55
Clear space for headway under the arches	200
In width at a minimum height of 90 feet—	
Width of middle pillar of solid masonry	130
Height of ditto	140
Width of side pillars .....60 to	70

The Trustees of Carnarvon Harbour, as well as other parties concerned in the coasting trade, regard this proposed bridge as possessing all the defects and dangers of the arched bridges of former times, aggravated by its diminished space from pier to pier, by its increased mass of masonry, by its fixture in a most dangerous locality, and by other circumstances too numerous and particular to detail in this article.

Memorials to Government having been presented on the subject, engineers and nautical gentlemen nominated by them have been sent down to inquire particularly into the matter, and a meeting for this purpose took place at the George Hotel, near Menai Bridge, on the 25th ult. On the part of the Admiralty there were present Sir John Rennie and Mr. Rendel, engineers. The presence of a nautical man having been suggested by the trustees, Captain Vidal, R.N. of the surveying steamer Styx, was sent down about a fortnight back, and he has since been occupied in making a minute survey of the Swellies, and obtaining all possible information on the mode of navigating vessels there. The Chester and Holyhead Railway Company were represented by Captain Moorsom, R.N., and Mr. Robert Stephenson, the engineer, attended by Mr. Parker (of the firm of Parker, Hayes, Barnwell, and Twisden, of London, solicitors); T. H. Evans, Mayor of Carnarvon; H. P. Manley, Esq., collector of the Harbour Dues; R. A. Poole, Esq., of the firm of Messrs. Poole and Powell, solicitors of Carnarvon, with Mr. Poole, jun. appeared for the trustees.

The most particular attention was paid by the scientific gentlemen present to the statements of every person examined, and we believe the contending parties separated with the best feelings, and under the impression that their respective interests had been carefully considered, and would be duly protected.

In the course of the inquiry, Mr. Stephenson stated that he considered it perfectly practicable to construct cast-iron arches which should not be effected by the vibration of a railway. That he was not at present prepared with any plan of a suspension bridge which he considered unobjectionable as applicable to a railway. That the arches of the proposed bridge could be let down from above into their proper places, but that for this purpose the main or middle pillar of masonry must be at least of the height marked, viz. 130 feet, and in all probability more. That it would not be difficult to form it into two pillars by an arched aperture in the middle.

THE BOX TUNNEL.

Considerable alarm having been excited by an account in the newspapers, of the fall of a quantity of stone from the top of the Box Tunnel, it seems desirable to give increased publicity to Mr. Brunel's report, as calculated to allay the fears of the public:—

"18, Duke-street, Westminster, April 7.

"Gentlemen,—I beg to lay before you a short statement of the circumstances attending the falling of a stone in the Box Tunnel, on the 24th ult. I should remind you that about 'a quarter' in length of the tunnel, near the east end, is cut through the natural rock, and is not lined with masonry. At the eastern extremity, a short distance was arched or lined subsequently to the completion of the tunnel. In the centre of this length of inclined tunnel is one of the large working shafts. During the winter, and particularly during the thaw after a severe frost, the surface of the rock, and some of the beds particularly, have always suffered in the immediate neighbourhood of the shaft and formerly also near the east mouth; but since the arch has been turned, for some short distance within the mouth, no further spawling or scaling of the stone takes place there. Down the shaft, however, the cold air descends, and for 50 or 100 yards on either side of the bottom of the shaft the most intense cold frequently prevails. During the past very severe winter, men have been constantly employed between the trains in breaking the icicles which form in and about the shaft, and knocking down spawls or loosened stones, and the effect of the shaft was found to be so mischievous that it has been determined to close it as soon as the frost would permit of the necessary masonry being built. Between the trains on the day in question a large stone which apparently had been loosened by previous work, fell, not from the roof, but from the side of the tunnel, near the shaft. It fell upon the rails, and the empty assistant engine, although signalled by the men employed at this work, ran upon it and was thrown off. This led to the delay of the succeeding trains. The accident was entirely the result of the severe cold, and owing to the open shaft. The shaft is now being closed. No effect has ever been produced upon any other part of the rock than that exposed to the direct action of the frost—formerly, near the mouth, and subsequently near the shaft. Such occurrences are by no means unfrequent consequences of severe frost in open cuttings either of railways, canals, or common roads, and are much more rare in tunnels. In the Box Tunnel the frost only reached, as I have said, a short distance either way from one shaft, and this will now be closed. It is altogether an incorrect statement which has been circulated, that there is any thing peculiar

in the stratification or the character of the beds of oolite at Box that can or does cause any danger; on the contrary, there is a very fine, hard, and sound bed, which has been selected and made to form the roof by working up to it, and from which nothing ever fell, and there are extensive quarries close by exhibiting the durability and soundness of this stone with roofs of much greater extent than in the tunnel.

"I. K. BRUNEL."

General Pasley has also reported, and declares that the tunnel is perfectly sound and safe.

COLLEGE OF CHEMISTRY.

AN attempt is being made to establish a college of chemistry in the metropolis. It is a national disgrace that we have not had for many years an institution of this kind in active operation, and it is to the want of such a college that we must attribute the little progress which this science has made in this country, when compared with the improvements which have been effected in the various continental states, particularly Germany, where schools of practical chemistry have for a long period been established.

The promoters of this college have four objects in view—viz.: 1st. To establish a laboratory (as designed by Sir H. Davy) for original investigations, and for extending the boundaries of chemical science on the model of the Giessen laboratory. 2nd. To form a "college" for the instruction of students in analysis and scientific research, upon such terms as to encourage young men of talent and scientific taste to apply themselves to chemistry, and for qualifying public lecturers and teachers. 3rd. To form departments for the application of chemistry to agriculture, geology, mineralogy, and metallurgy, by an analysis of soils, rocks, &c.; to medicine, physiology, the arts and manufactures. 4th. The employment of such means as may appear expedient for encouraging the pursuit of scientific chemistry throughout the country, and for making it a branch of general education.

The project is patronised by some of the most eminent public and scientific men of the day, among whom we find (on the council) the names of the Dukes of Wellington and Sutherland, the Marquis of Lansdowne, Earls of Dalhousie and Fitzwilliam, Sir J. Clark, Bart., Dr. Holland, Dr. Gregory, and the Rev. Dr. Buckland.

It is trusted that so noble an undertaking will not be allowed to fall to the ground for want of public patronage.

A case illustrating the importance of a school of practical chemistry, with reference to metallurgy, has been mentioned recently. A student of the Giessen school having visited and inspected the iron-works of Count Salm, in Austria, was enabled to suggest improvements in the processes employed, the cost of which did not exceed 600*l.* sterling. For this, and for superintending the processes, the chemist agreed to receive a third part of the profits accruing. At the end of five years he had realized a fortune of 30,000*l.*

SCENIC EFFECTS.—For the approaching bazaar to be held in Covent Garden Theatre, in aid of the Anti-corn Law Fund. It has been determined by the stroke of Grieve's magic wand, and the aid of the "willing imps" in the service of Mr. Edwards, builder, of Manchester, to transform the whole interior of the theatre, audience part and stage, into a Norman-Gothic hall, which is to have a roof corresponding in character with the style of the rest of the building; this will be of stained glass, from a design of Mr. Grieve, and brilliantly lighted from above so as to shed a "myriad-coloured lustre" of great brilliancy on the upper part of the large area. The pit will be floored over, so as to make it and the stage one vast hall; and there will be a range of Gothic windows of stained glass round the stage part of the hall.

LINCOLN'S-INN NEW SQUARE.—The projected improvements in the new square have been somewhat suddenly suspended by order of the Benchers, in consequence of a protest against them having been numerously signed by the owners and occupiers of chambers in the square.

New Books.

Bloomfield's Poems. Illustrated Edition. Van Voorst. London, 1845.

THE public are indebted to Mr. Van Voorst for beautifully illustrated editions of several of our best authors, amongst which the "Vicar of Wakefield," with Mulready's drawings, stands quite alone. The work now before us contains thirteen illustrations by Sidney Cooper, Thomas Webster, A.R.A., J. Callcott Horsley, and Fred. Tayler, admirably engraved on wood by Thurston Thompson. It cannot fail to be acceptable to the admirers of "The Farmer's Boy," and will make better known writings which are full of right feeling and exquisite sensibility. The drawing at the head of "Richard and Kate," by Webster, is our favourite;" we should advise the artist to make a picture of it.

A Series of Letters on Agricultural Improvement. By J. J. MECHI. Longman, 1845.

THESE letters unfortunately look a little too much like advertisements; but as we concur with the author "in thinking that the United Kingdom should be as a well-cultivated garden — that our national agriculture has not progressed in the same ratio as our other productions — that this non-progression is a serious national evil, and source of weakness — and that it arises from a want of knowledge and inclination rather than from want of means," and, moreover, are of opinion, that the letters contain much which may be studied usefully by all who are engaged in agriculture, we cannot avoid recommending them to the consideration of our readers. Efficient drainage, good farm buildings, and careful preservation of all manure produced on the farm, are amongst the prominent points urged.

Correspondence.

BATHS AND WASH-HOUSES.

SIR,—I beg leave to trouble you with a few remarks concerning the designs for Public Baths and Wash-houses. I had inspection of the designs at Mr. Rainy's rooms on Tuesday; after spending some time there, I was struck with the idea that the plans generally were upon one principle, and I cannot conceive that any one of those designs was such as should be acted upon; some of them, so far as the drawings and designs for elevations were concerned, certainly deserved credit, but some of the gentlemen strayed away from the voluntary contribution bath and wash-house edifice to that of the private gentleman's country seat.

Now, my idea as to that which is wanting for such a public building and purpose is:—1st. A cold plunging bath for male adults, and another for male youth; another for female adults, and another for girls, all of which should be of good extensive dimensions. This is one most essential requisite for the poor, in proof of which I will refer you to the bathing in the Thames, Lea River, and ponds wherever they can get to swim and wash in; none of these plans possess these plunging baths except two or three of them, and those only on a very small scale.

My second observation will be in regard to the washing department; most of the designs have these offices upon the ground-floor plan, which, according to my opinion, is out of all character so far as concerns the principle of steam, because in having the washing rooms on the ground-floor, the wash steam will rise, and obtain access to the upper floors.

I consider the plunging, warm, vapour, and shower baths should be on the ground-floor, and the washing rooms on the upper floor, because when the women are in the building, they would have every requisite before them for washing; that the trouble of going up one pair of stairs would not be much to them, but to warm bathers it would be so, as many of them are invalid, and some scarcely able ot crawl—for instance, a poor creature with violent rheumatism.

Waste steam from the washing being carried on up stairs would do no harm; the building might have a ventilated roof for the escape of steam, and thus be kept in a healthy state, at least as far as vapour is concerned. The ironing and drying rooms could be in connection. If these observations be worthy of your consideration, you are at liberty to use them in any way you please.

Before concluding, I will remark respecting the committee for deciding upon a design for such an important matter; it should consist, I think, of the following, and to be men of experience:—architects, medical men, merchants, tradesmen, and poor mechanics; from such a committee as this a good result might be expected. In the first place, the architects would be enabled to decide upon the mechanical arrangement of the design; the medical men would be enabled to state upon the requisite wants and construction of shower, vapour, and warm baths; the merchants and tradesmen upon the general wants, and the mechanics upon the actual necessities of the poor.—I am, Sir, &c.,

Hoxton, April 3rd. ARCHI.

ACCIDENT AT OLDHAM.—IRON GIRDERS.

SIR,—In your journal of the 21st of last December, you announced that the Government had appointed a commission, consisting of Sir Henry De la Beche and Thomas Cubitt, Esq., to inquire into the causes of the falling of the cotton-mill at Oldham, and as to the failure of part of the prison at Northleach; and on the 1st of last February, you stated that certain experiments had been made at Thames Bank on the strength of iron girders, for the express purpose of assisting those gentlemen in their inquiries. These announcements have naturally induced me, and to my knowledge many others, to look almost impatiently for a detailed account of these experiments, as well as for a full statement of the causes which led to the accidents referred to in the commission. I therefore beg to inquire whether a report has yet been made, and if it has, whether you intend to give the substance of it in your valuable journal?—I am, Sir, &c.,

SIDEROS.

*** We understand that the commissioners made their report some time ago: we shall not fail to give our readers the substance of it. As to the experiments on cast-iron girders, we were prepared to place the results before the public, but learning afterwards that they were to be made part of the report to her Majesty's Government, considered it expedient to defer doing so until after the report had been considered.—ED.

THE DISTRICT SURVEYORS.

SIR,—With others of the building community, I have anxiously been looking in your useful weekly columns, under the hope of finding, either from yourself or your correspondents, some article tending to relieve the building interest from the despotism desired to be exercised over it by the district surveyors. They make every frivolous circumstance a matter of reference to the official referees to whose dictum we are still exposed, notwithstanding the excellent and unanswerable arguments which have appeared in your columns.

To myself it would seem that the secret desire of these gentlemen is to perplex all building operations carried on under the guidance of private surveyors, so as to make it compulsory on builders to employ the surveyor of the district in which he is about to build, in order to protect his operations from molestation or hindrance; to resist which dishonourable attempt, it is a matter of surprise that the trade has not united.

Union is strength—every wrong has its remedy, and this would be found a certain one. I am aware some will say this position is improbable, because the Act specifies that if a district surveyor be employed by the builder, he, the district surveyor, shall not be the official surveyor over such building, but this is easily managed in more ways than one; and looking at their procedure, I maintain that their litigious and unnecessary conduct fairly induces this conclusion. But whether right or wrong in this general censure (upon a body who should be far above such measures) it would be desirable, under the circumstances, to call a public meeting of the trade, request yourself, or some other gentleman who has studied the subject, to preside as chairman, and making common cause, select some cases best calculated to elicit a legal and honest construction of such points as press most heavily upon the trade by an appeal to the highest authorities.

I will gladly attend myself, having hoped before this to find such a course suggested by some more weighty individual than,

Sir, your obedient servant,

SCRUTATOR.

*** Our correspondent must not be led by the litigious and unwise proceedings of two or three of the district surveyors to condemn the whole body, which consists, for the most part, of able and right-judging men. We may feel it our duty shortly to animadvert on the conduct of these exceptions more pointedly. As to the proposed public meeting, we received some weeks ago from several of our correspondents a similar suggestion, but delayed publishing it on the ground that time would more clearly point out what portions of the Act required alteration.—ED.

ARCHITECTURAL MODELLING.

SIR,—I see in your last number a letter on the subject of architectural decorations, the tenor of which I should like to see carried into effect. At the same time, as a practical man, I would wish to point out a few of the evils of the present system, which architects might easily alter. In almost all cases the decorative modeller is not employed by the architect, but by the builder, who, having little taste for works of art himself, employs any body he can get to do it cheap, mostly some plasterer, who understands little about modelling, nothing about drawing or style of composition, while the artist of acknowledged talent is entirely deserted by the architect. The drawing made by the architect, seldom for more than a quarter part, gives a very ambiguous idea of the subject wanting, and in many cases no drawing at all, the models so made are consigned to the tender mercies of some hod-boy to cast, and fixed by others who know as little about it. Were the architects to employ the decorative artist without the interference of the builder, and allow a fair remuneration for his work, he would feel an interest in the finish of the works, and would soon effect great improvement.

I am, Sir, &c.,

A DECORATIVE MODELLER AND A SUBSCRIBER.

CEMENTS.

SIR,—I think your correspondent, James Pulham, in No. 113, would do many of your readers who are users of cement a favour if he would explain the difference in the properties of Maude's Portland cement, Pulham's Portland-stone cement, and Austin's stone-colour cement; the three are described as bearing a close resemblance to Portland stone.

I am, Sir, &c.,

A READER.

Newcastle-on-Tyne.

Miscellanea.

THE PYRAMIDS ECLIPSED.—The *National Intelligencer* contains a long letter from Mr. Pickett, at Lima, commenting upon discoveries of very extraordinary ruins said to have been found by Judge Neito, in the province of Chaohapovos, while on an exploring expedition. In making a survey of the country he found at Ceulap, a building of most extraordinary character, which he describes as a wall of hewn stone 560 feet in width, 3,600 feet in length, and 150 feet high. The edifice being solid in the interior for the whole space contained within 5,366,000 feet of circumference, which it has, to the beforementioned height of 150 feet, is solid and levelled, and upon it there is another wall of 300,000 feet in circumference in this form, 600 feet in length and 50 in breadth, with the same elevation (150 feet) in the lower wall, and, like it, solid and levelled to the summit. In this elevation, and also that of the lower wall, are a great many habitations or rooms of the same hewn stone, 18 feet long and 15 wide, and in these rooms, as well as between the dividing walls of the great wall, are found neatly constructed ditches, a yard or two-thirds in length, and half a yard broad and deep, in which are found bones of the ancient dead, some naked, and some in cotton-shrouds or blankets, of very firm texture, though coarse, and all worked with borders of different colours.

INGENIOUS WORKMANSHIP.—We have inspected with much gratification a working model of a beam steam-engine, manufactured by Mr. Benjamin Warner, a watch-spring maker, who has already exhibited at the Polytechnic Institution some extraordinary examples of patient ingenuity. It is composed of more than 200 pieces, and has the following dimensions:—The length of the stand is 3¼ inches, the length of the beam 2¼ inches, the height of the supporters of beam 1⅛ in., the diameter of cylinder ⅛ths of an inch, the length of stroke ⅛ths. It has governors acting correctly, and fine silk forms the band. The parallel motion has straps and brasses, and is fixed with gibs and keys. Every part of the engine is bolted and screwed together, and finished in the same manner as the inside of a watch. We were sorry to find that the ingenious mechanist who had constructed this curiosity was about to seek his fortune in America. It is a pity to lose such a workman.

RADIATION OF HEAT.—M. Melloni, of Naples, has just completed some very interesting experiments on the radiation of heat. The previous researches of Rumford and Leslie proved that the surfaces of different bodies possess at very different degrees the faculty of giving out, by radiation, the heat of the substances which they envelope; and it has also been satisfactorily established that layers of the same varnish considerably modify the radiating powers of the surfaces over which they are laid; shewing, therefore, that the rays of heat given out by a substance proceed not only from its surface, but the points around it to a certain depth. It, therefore, remained to measure numerically the thickness of the superficial layer which assists the radiation, and to this undertaking M. Melloni applied himself. He covered the faces of Leslie's cube with equal layers of a proper varnish, augmenting successively the number of layers, and measuring each time with his thermometrical apparatus the radiating powers of the surface; he found that the power went on gradually increasing up to the seventeenth layer of varnish, when it became stationary. At this point, the total thickness of the varnish, as ascertained with the greatest possible minuteness, was about the four hundredth part of a millimetre. In comparing this result with that which attended the use of leaf-gold, M. Melloni found that a much thinner coating of gold would produce the same amount of radiation; but this difference is not to be imputed to the greater or lesser transparency of the coating, for lamp-black, which is very opaque, possesses like varnish the property of giving out heat from the layers on which it is placed.

FATAL ACCIDENT THROUGH THE FALL OF A QUANTITY OF IRON RODS.—On Saturday the 5th inst., just at the hour when the men engaged in the works of Messrs. Ditchburn and Mare, at Blackwall, were assembled to be paid, a loss of life ensued from the giving way of a stack of iron rods, which had been placed in a slanting direction against a beam, the bottoms of the rods resting upon the ground in the same way as they are placed in other iron yards in London near the Thames. Eight bodies, two lifeless, and six more or less mangled, were found under the ponderous weight, said to be about eleven tons. At the inquest, which was held on the Monday following, the cause of the accident was explained by Mr. Ditchburn's foreman, who stated his belief that the stack was thrown down by the men pressing against it. They were very numerous, and were lounging about waiting for their pay. He could not account for it in any other way, because the iron actually fell in the opposite direction to that in which it was placed. They were within an inch and a half of an upright position, and he had himself seen them properly strutted and supported. It would, by pressure, have fallen forwards, but it fell sideways. Mr. Ditchburn stated that the rods were so placed against his orders, and he was unconscious of its position until he heard of the accident, which he could not believe to be true, as he had given express orders that the iron should be moved away from its original position and placed horizontally on the ground. He had no doubt that it was thrown down by the pressure of the men against it. A verdict of "accidental death" was instantly returned.

DEMOLITION OF THE FLEET PRISON.—The Corporation of the city of London having purchased this property for 25,000*l.* from the Government, are now engaged in disposing of its materials by auction. The first day's sale took place, on the premises, last week; the second portion is to be disposed of by the auctioneers, Messrs. Pullen and Son, on the 21st instant, and following day. The earliest mention of the Fleet Prison occurs in the reign of Richard I., but up to the 16th century nothing is known of its history. The prison was burnt by the followers of Wat Tyler, and in the 16th and 17th centuries the records of the Fleet became suddenly filled with matters of the deepest interest in connection with the religious martyrs of the reigns of Elizabeth and Mary, and the political prisoners of the Star Chamber in the reign of Charles I. It appears that the prison was used for the confinement of debtors from the 13th century, and a petition from a debtor named John Fraunceys, in 1290, is stated in Mr. Knight's "London" still to be preserved. Great atrocities were committed on the inmates, and until the year 1727 little was done in the way of redress. In that year, however, a Parliamentary committee brought many things to light, and since then improvements have been effected in the management of prisons. The great Howard and the other "sons of mercy" have not laboured in vain, though they were not permitted to see the fruit of their exertions. The building now standing was erected after the burning of the older one in the Gordon riots of 1780, when the mob was polite enough to send notice to the prisoners of the period of their coming, and on being informed that it would be inconvenient, on account of the lateness of the hour, to postpone their visit to the following day. The former building also dated its erection from the period of a fire, its predecessor having been destroyed in the great conflagration of 1666. The entire prison at the present time occupies an acre of ground. Nearly 1,000 prisoners, besides the numerous officers of the establishment, have at various times been accommodated in these extensive premises. The buildings are computed to contain upwards of 3,000,000 of stock bricks, 50 tons of lead in the various forms of gutters, flats, cisterns, and pipes, 200 squares of slated roofs, 40,000 feet of York paving, 250 pair of glazed sashes, an infinity of doors, partitions, and interior fixtures and fittings-up, the pewing of the chapel, strong boarded and timber floors, iron girders, massive iron gates with locks and bolts of singular construction and well-tested excellence. At present it is not decided what improvements will take place on the site—whether a new street will be formed, or accommodation afforded for the administration of public justice.

FURNITURE WOODS.—A few nights since, in the House of Commons, Mr. C. Buller said that Sir Robert Peel had stated that furniture woods would be exempted from duty. He had thought they would have been included in one category; but he found the Government had enumerated the woods they meant to exempt. Now, there were various new kinds of these woods continually coming in from the colonies, with respect to which he wished to know whether, if left unenumerated, they would come in under the general designation? Many such woods, the produce of Ceylon and New Zealand, were not found in the list at all. Mr. Labouchere said that, consistently with their professed views, the Government ought to encourage the importation of these new furniture woods. There were many species of woods in the colonies which had hitherto been kept out by the duty. They all ought to be admitted on the same terms as mahogany. Sir G. Clerk said that as soon as the names of these new furniture woods were known, they might be admitted free of duty. Mr. C. Buller observed that the Government list was an ungracious one. There were a great number of furniture woods from Italy, among others olive wood, fig, and orange wood, which were not in the list. Mr. Mitchell then inquired whether the Government meant to take off the duty on wainscot logs; if not, he should submit a proposition for that purpose. Sir Robert Peel, in answer, said the Government was under the necessity of making some discrimination. If they said that wainscot woods in general were to come in, it would be contended that wainscot logs from the Baltic should come in free of duty.

THE NEW RAILWAY TOWN, SWINDON.—Swindon, on the Great Western Railway, like Wolverton, on the London and Birmingham, and Crewe, on the Grand Junction, is one of the extraordinary products of the railway enterprise of the present day. Until lately Swindon was remarkable for nothing but heath and upland; it is now the nursery of a new community, the seat of well-ordered industry, and a colony of engineers and handicraftsmen. The total sum, expended on the locomotive establishment at Swindon, including engines and carriages, is about 550,000*l.*, exclusive of the expense of engine-house, machinery, and tools, amounting to 26,500*l.* The average half-yearly expenditure in wages to engine-drivers, firemen, guards, servants, porters, clothing, &c., is 140,000*l.* The company manufacture their own engines at the factory, where cleaning and every thing connected with constructive repair is carried on. The number of mechanics, including engine-drivers, firemen, fitters, coppersmiths, cleaners, and labourers, constantly employed, varies from 300 to 350. Swindon consists of neat brick buildings, and is so far adjacent to the line as to be seen by the passing trains. The total population is upwards of 800. A library and reading-rooms have already been formed for the use of the inhabitants and servants of the company, together with a Mechanics' Institute. The church, which is being built entirely of stone, under the superintendence of Messrs. Scott and Moffatt, is nearly completed. It is in the decorative style of the 14th century, with aisles, clerestory, chancel, tower, and spire. The entire structure is 140 feet high, and will accommodate 800 persons, all the sittings being entirely free. The estimated cost is between 5,000*l.* and 6,000*l.* Its consecration by the Bishop of Gloucester and Bristol is fixed for Friday, the 25th of April, St. Mark's day, and it is to be dedicated to this evangelist. Adjoining the church, at the east and west, are the schools and parsonage, built in a style corresponding with the church, at a cost of 1,700*l.* On the south of the church a spacious piece of ground has been purchased by the Great Western Company, and laid out as a park or pleasure-ground for the inhabitants.

BARN FLOORS.—A correspondent of the *Mark Lane Express* states, that having a very bad barn floor, he thought of boarding it, but the expense was an objection, as the boards would require to be very thick; besides, he had observed that a floor of that kind in the neighbourhood had become splintered by the flails, was rotted by the damp, and gnawed by rats. Happening to have a large number of unsaleable pieces of timber, coarse, crooked arms, and knotty ends, that were altogether worthless, even for firewood, for it was impossible to split them, it occurred to him that they would make an excellent surface for his barn floor. He thus describes the mode he adopted in carrying out this idea and success that attended it. "I had an X cross cutting stool made, on which these logs were placed, and cross cut into blocks of a foot long; the bark and any excrescences having been chopped off by the hatchet, the blocks were thus reduced to irregular figures of all shapes, no matter what. The floor having been excavated to the proper depth and levelled, blocks were placed at distances so as to be levelled by a long hand level, and the whole surface levelled off from those by a straight edge. The blocks were laid down on their ends, having the cross cut surface or end of the grain upwards; the best face of course up, and some attention being paid to their mutual adaptation with regard to fit; but, of course, with such a variety of irregular figures there were numerous cavities between—these were filled as well as might be by smaller blocks, thus occupying the larger spaces. Still lesser pieces were now put into the remaining openings, and dry sand were swept over till the holes were filled up to near the top, and the remaining interstices were filled with wedges, the heads of which were sawed and adzed off: all was rammed down with a common paving hammer. This floor has now been a year in use, and is perfection itself for its purpose. The cost was trifling: two labourers in a fortnight cut most of the blocks; and the carpenter, with a handy assistant, laid them in a few days. The wedges should not be driven hard, nor until the blocks are well confined, or they will be spread asunder by the wedges."

MEASUREMENT OF WOODEN SLEEPERS FOR RAILWAYS.—The following is a copy of a new rule or method, approved by the commissioners of the customs, for the measurement of wooden sleepers of a triangular form, usually imported for railway purposes, when measured singly:—"The length to be taken to the quarter of a foot, and the perpendicular height to be taken to the quarter of an inch, adding thereto the height of the defective angle, which together will constitute the entire perpendicular height; one-half of the base to be then taken, and the contents ascertained by the inverted side of the sliding rule, as directed in the measurement of unequal-sided timber. An example is given of a piece of timber of the description and shape imported in large quantities for the purpose stated, the length being 8¼ feet; the base or breadth at the end, 11 inches; the perpendicular, 6½ inches; with 1 inch defective angle: for instance, by the pen:—

```
                5.5 ½ base.
                7.5 perpendicular.
               ----
                275
                385
               ----
               4125
                8.25 length.
               ----
              20625
               8250
            3.3000
            ------
144 )340.3125 ( 2.3-10ths.
    288
    ---
    523
    432
    ---
     19
```

Operation by the sliding rule. Set 7½ inches, the perpendicular height (the defective angle being added thereto) on the inverted line E to 5½ inches—one-half the base on line C; then opposite to 8¼, the length in feet on the line A will be found 2.3-10ths on the line B, the content in cubic feet for duty." This order has been communicated to revenue officers at this port and at the various outports of the kingdom by directions of the commissioners for their future government.

IMPORTANT DISCOVERY. — A scientific gentleman, residing at Ipswich, Mr. Frederick Ransome, engineer, has lately discovered a method whereby the hardest stone can be brought into a consistence resembling common putty, so that it can be cut and moulded into any shape, for useful and ornamental purposes, without altering its general character and appearance; for it becomes as hard, and in some instances even harder, than when subjected to the process. Another peculiarity of the process is, that any colour, or variety of colours, can be imparted to its solid substance, so that an endless variety of shades can be produced, and as it is capable of being polished, it effectually resists the action of the weather. It can also be used as a cement, and can be brushed over the surface of wood, so as to render it fire-proof.—*Sheffield Mercury.*

COPPER.—Returns of the average prices of copper purchased for the use of her Majesty's dock-yards in each year, from 1815 to 1844 inclusive, and of the price of cake copper in London during the same period, have been issued in the shape of a parliamentary paper, obtained on the motion of Sir C. Lemon, one of the representatives of the mining districts. From 1815 to 1832 the return is *nil*; in the year 1832, the average price of the copper in question was 82*l.* per ton; in 1833, 87*l.* 14s. 6d. per ton; in 1836, 111*l.* 7s. 1d. per ton; in 1839, 97*l.* 10s. per ton; in 1840, 102*l.* 2s. 6d. per ton; in 1841, 102*l.* 8s. 10d. per ton; in 1842, 93*l.* 10s. per ton; in 1843, 82*l.* 10s. 9d. per ton; and in 1844, 83*l.* 7s. per ton. The Admiralty department possesses, it appears, no official means of furnishing the price of cake copper in London during the period stated.

STATUE TO GEORGE STEPHENSON, ESQ.—It is said to be in contemplation to adorn the splendid high level bridge across the Tyne, about to be constructed under the auspices of Mr. Hudson, with a noble statue in honour of George Stephenson, Esq., the eminent civil engineer, a native of Newcastle-upon-Tyne, and beyond all doubt one of the greatest men of the day.

NEW STOCK-EXCHANGE AT BRISTOL.—At Bristol, a large and influential meeting was held on Monday, the 31st ultimo, at the offices of Messrs. Bradley, Barnard, and Co., Albion-chambers, at which resolutions for forming a Stock Exchange were cordially and unanimously passed. John Kerles Haberfield, Esq., has consented to accept the office of president.

MUSEUM OF ARTS BILL.—The Museum of Arts Bill was opposed by Mr. Buck, who moved that it should be committed that day six months. Sir J. Graham hoped that Mr. Buck would not persevere in his motion. The government were prepared to support the principle of the bill, although its provisions went rather beyond the understanding which had been come to. He would recommend the postponement of the committee for a week, and in the interim he would devote attention to the subject, and take an opportunity of privately explaining to the hon. member the objections entertained to the bill in its present shape. This proposition was assented to, and the committee was accordingly postponed as suggested.

NOTICES OF CONTRACTS.

[We are compelled by the interference of the Stamp Office to omit the names of the parties to whom tenders, &c., are to be addressed. For the convenience of our readers however, they are entered in a book, and may be seen on application at the office of "The Builder," 2, York-street, Covent-garden.]

For the supply of from 2,000 to 3,000 feet of new 2½ York Paving to the Commissioners for paving the Skinners' Estate, St. Pancras.

For the execution of certain Works required to be done in Hastings-street and Claremont-place, for the Commissioners of the Skinners' Estate, St. Pancras.

For the building of a new Bridge on the Rotherham and Pleasley Turnpike Road at Guilthwaite Common, near Rotherham, Yorkshire.

For the erection of Stone Arches and other works for the Newcastle and Carlisle Railway Company.

For the supply of Paving Granite, flint, Kentish Rag, and Gravel, to repair the highways of Saint Mary, Newington, from 23rd April, 1845, to Easter Tuesday, 1846.

For such Masons', Paviors', and Plasterers' Works as may be required at Hull for the Board of Ordnance.

For furnishing and fixing in the town of Southampton 205 Gas-lights, to consist of 81 Columns, and 124 Scroll Brackets, with the necessary Lamps, Pipes, Fittings, &c.

For taking down a tenement in Bishop-street, Coventry, and erecting two Messuages on the site and ground adjoining.

For submitting a plan of a Tread-wheel, and constructing the same in the Common Gaol of Great Yarmouth, Norfolk.

For the restoration of the Parish Church of Grays Thurrock, Essex.

For all the Works to be done in the erection and completion of the new cast-iron Bridge over the Haven of Great Yarmouth, including the finding of labour, certain materials, &c.

For the construction of the third and fourth divisions of the Chester and Holyhead Railway.

For the supply of Materials to the Commissioners of the Metropolis Roads.

For providing, squaring, and laying new York Paving and Granite Curb, &c., for the Commissioners under the Bedford Paving Act, St. Pancras.

For various Engineers' and Joiners' Works required to be done at the new Workhouse, Birchfield-wood, Saubridge, Kent.

For the Masonry Work of several Viaducts and Bridges.

For performing the several works in building a new Workhouse at Tenterden.

For the formation and completion of a new Drain, being about eleven miles long, twenty yards wide, and five yards deep, for the Middle Level Drainage Commissioners. Also for the erection of a Staunch, several Bridges of wood with brick abutments, together with the necessary culverts, and other works.

COMPETITIONS.

For the erection of a Baptist Chapel at Folkstone.

For laying out the Grounds of the Victoria-park Cemetery, and for draining the same, making the roads, paths, and finding all necessary trees, shrubs, materials, &c.

Plans for a Church to be erected within the Borough of Kingston-upon-Hull.

Plans, sections, and elevations for a Terminus, and other requisite accompanying offices, for the Great Southern and Western Railway, Ireland.

APPROACHING SALES OF WOOD, &c.

BY AUCTION.

At the Union Inn, Denby, Derbyshire: a large quantity of full-grown Coppice and Hedgerow Timber.

At Shortgrove-park, Newport, Essex: 150 Timber Trees, consisting of Beech, Ash, Sycamore, Alder, Elm, &c.; 230 very fine large Firs, &c.; many of the Beech and Ash Trees are of large dimensions and good quality.

At Waresley, Huntingdonshire: upwards of 200 very choice Oak Trees of large dimensions and fine quality. Also several lots of Ash and Elm Timber Trees, and Larch and other Spires.

At Framsden, near Debenham: a quantity of Ash and Elm Pollards; Ash, Elm, and Sallow Timbers, &c.

At the Swan Inn, Rickmansworth, Herts: the growing Oak Timber on Linster's Farm, and on Savoy Farm, consisting of about 255 Trees.

At Seagry Wood, near Chippenham, Wiltshire: from 1200 to 1400 Ash Poles of large dimensions; prime Elm, Ash, Beech, and Chesnut Timber, &c.

At the Timber-yard, opposite St. Giles's Church, London: 3,200 Pine Deals, Planks, and Battens, 840 Yellow Deals, 2,480 Spruce Deals and Planks, 120 Yellow and White Battens, 14,000 feet of three-quarter inch and half inch Pine Boards, &c.

250,000 Building Bricks, 40,000 Arch ditto, &c.; now at Sherborne Kiln, three miles from London.

At Patcham, near Brighton: a large quantity of Railway Materials; the whole of the Iron is of Staffordshire manufacture.

BY TENDER.

All the implements used in the execution of the works at the Fleetwood-pier; they are now on the wharf at Fleetwood, and can be put on the railway-waggons, or on board ship.

Above 1,000 Oak Trees, now standing upon Lewisham Lands-wood, near Beckingham, Kent.

20 Oak, 1 Elm, 1 Cherry, and 12 Ash Trees; now standing at Hanmer, near Welchhampton, Cheshire.

MEETINGS OF SCIENTIFIC BODIES

During the ensuing week.

MONDAY, April 21. — *Statistical*, 11, Regent-street, 8 P.M.; *Chemical* (Society of Arts), Adelphi, 8 P.M.; *Medical*, Bolt-court, Fleet-street, 8 P.M.

TUESDAY, 22.—*Medical and Chirurgical*, 53, Berners-street, 8½ P.M.; *Civil Engineers*, 25, Great George-street, 8 P.M.; Zoological, Hanover-square, 8½ P.M.;

WEDNESDAY, 23.—*Society of Arts*, Adelphi, 8 P.M. (anniversary); *Microscopical*, 21, Regent-street, 8 P.M.; *Pharmaceutical*, 17, Bloomsbury-square, 9 P.M.; *Ethnological*, 27 A, Sackville-street, 8 P.M.; *Antiquaries*, Somerset-house, 2 P.M. (anniversary).

THURSDAY, 24. — *London Institution*, Finsbury-circus, 12 P.M. (anniversary); *Royal Society of Literature*, 4, St. Martin's-place, 3 P.M. (anniversary); *Medico-Botanical*, 32, Sackville-street, 8 P.M.; *Numismatic*, Somerset-house, 7 P.M.

FRIDAY, 25. — *Royal Institution*, Albemarle-street, 8½ P.M.; *Philological*, 49, Pall Mall, 8 P.M.

SATURDAY, 26. — *Royal Botanic*, Regent's-park, 4 P.M.; *Westminster Medical*, 32, Sackville-street, 8 P.M.; *Institute of the Fine Arts* (Society of Arts), Adelphi, 8 P.M.

TO CORRESPONDENTS.

"County Lunatic Asylum."—*Several correspondents are anxious to learn the decision in this competition.*

"A Subscriber" (Camberwell), *and* "T. A.," *next week.*

"P. D." (Lambeth). — *An inch superficial (4 by 3 for example) is the 12th part of a foot superficial, but a square inch (1 by 1) is the 144th part.*

"A Subscriber," *who asks relative to the Bell-hanging at the new Houses of Parliament, should inquire of the Clerk of the Works.*

"William Sugden."—*We are not disposed to pursue the subject further.*

"A Surveyor."—*We do not see any reason why the chimney in the fourth story should not be built over the breast below.*

"T. G. S." *asks whether the district surveyor can demand a fee on account of repairing a privy roof 20 feet from the house. If the roof of any building (unless insulated) be "stripped, ripped, or uncovered," Schedule G. provides that it "must be covered with slates, tiles, metal, glass, artificial stone, or cement," and as the district surveyor is bound to see the Act carried out, he might claim a fee even for a privy. If it be claimed, we shall be glad if "T. G. S." will let us know the sum asked, and in which district it occurs.*

"Repeal of the Window-tax."—*We will attend to the report of the delegates.*

Received.—"*A Manual of Gothic Mouldings,*" *by F. A. Paley, M.A. Van Voorst, London*, 1845. *A valuable little volume, to which we shall direct our readers' attention shortly.—A Subscriber from No. I.*

ADVERTISEMENTS.

BED FEATHERS.—DUTY FREE.—HEAL and SON have reduced the price of Foreign Feathers the amount of the duty, and they can now offer—

Best White Dantzic	2s. 10d.	Best Foreign Greys	2s. 0d.
Irish White Goose	2s. 0d.	Irish Grey Goose..	1s. 6d.
Best ditto	2s. 6d.	Best ditto	1s. 9d.
Poultry.....		1s.	

List of prices of every description of bedding sent free by post.

HEAL and SON, 196, opposite the Chapel, Tottenham-court-road.

MOON'S IMPROVED CHIMNEYS.—Samples of the Bricks to form the Circular Flue, now coming into general use, also those invented by Clark and Reed for a similar purpose, may be seen at the Patentee's Western Depôt, New-road, near Tottenham-court-road, where may be procured the Metal Bars and Throats, also the much-approved Caps for the prevention of Smoky Chimneys, without causing adjoining flues to smoke, or producing the noise so generally complained of, arising from a large surface of metal being exposed to the action of the wind.

Licences are granted to Brick and Tile Makers for manufacturing the Bricks and Tiles, throughout the United Kingdom, by application as above, or to Mr. ELIAS DORNING, 27, Cross-street, Manchester.

E. G.'s TRACING-PAPER.—It is warranted to take Ink, Oil, or Water colour, and is sold by MESSRS. ROBERSON AND CO., SOLE AGENTS, 51, LONG-ACRE, at the following cash prices:—

THIN TRACING-PAPER.

60 by 40, at	14l.	0s. per Ream, or 15s. 0d. per Quire.	
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THICK TRACING-PAPER.

40 by 30, at	14l.	0s. per Ream, or 15s. 0d. per Quire.	
30 by 20, at	7l.	10s.	,, 8s. 0d. ,,

N. B.—Every sheet is stamped with the Initials of the Manufacturer.

This beautiful and unequalled article is allowed to be the cheapest and most useful Paper hitherto introduced to the public, as will be best proved by a trial.

PAINTING BRUSHES OF SUPERIOR QUALITY.
TO PAINTERS, BUILDERS, &c.
J. J. KENT AND CO.,
MANUFACTURERS,
11, GREAT MARLBOROUGH-STREET, LONDON,

Offer to Painters, Builders, &c., Painting Brushes of a quality far superior to those generally offered for sale, to which they beg to call the attention of all who prefer quality and durability to apparent cheapness.

oooooo.—7 in. Dusters.
oooooo.—7 in. ditto, extra.
oooo.—Ground Brushes.
Plasterers' Brushes.
Distemper ditto. Ground and Unground.
Sash Tools, and Common Tools.
Tar Brushes and Masons' Brushes, and all other Brushes used by Painters and Artists.

Lists of Prices of Painting Brushes, and of all other kinds of Brushes, forwarded on application. Established 1777.

ATKINSONS CEMENT.—The public is respectfully informed, that the price of this very excellent Cement, which has now been in use for Architecture and Engineering works upwards of thirty years, is reduced to 2s. 3d. per bushel, and may be had in any quantity at Wyatt, Parker, and Co.'s Wharf, Holland-street, Surrey side of Blackfriars-bridge.

N.B.—This Cement being of a light colour, requires no artificial colouring or painting, and may be used for stucco with three parts its own quantity of sand.

KEENE'S PATENT MARBLE CEMENT.—The Patentees of this composition beg to refer to the British Museum, the Royal Exchange, the new works at Bethlem Hospital, Greenwich Hospital, and the Coliseum in the Regent's-park, as buildings finished or in progress, in which Keene's Cement has been used as an internal stucco. Its superiority to common plastering consists in its extreme hardness, and the rapidity with which it dries, which qualities fit it to receive paint or other finishing sooner than other water Cement.

When employed for skirtings, architrave, and other mouldings, in place of wood, it checks dry-rot, is impervious to vermine, prevents the spread of fire, and is more economical in its application than the material for which it thus becomes the substitute.

Confirmation of these statements is to be found in the almost universal adoption of Keene's Cement for Skirting and Hall flooring in the new houses on the Hyde Park Estate, where its application is to be seen to the fullest advantage.

In Liverpool and Manchester, Keene's Cement has in several cases been used for the covering of the fire-proof warehouse floors, where its lightness and hardness give it the preference over tiles and flagging, which are much heavier, and necessarily leave the floor intersected with numerous joints, whilst Keene's Cement is laid down in one unbroken surface.

The high polish and marble-like hardness of which this Cement is susceptible render it the most suitable material for the manufacture of Scagliola.

Patentees, J. B. WHITE & SONS, Millbank-street, Westminster, Manufacturers of Roman and Portland Cement.

Depôt in Liverpool, 36, Seel-street, James Woods, Agent.

MARTIN'S PATENT CEMENT.
TO ARCHITECTS, BUILDERS, AND PAINTERS IN FRESCO.

STEVENS and SON, PATENTEES and SOLE MANUFACTURERS, beg respectfully to announce that this beautiful cement has now arrived at a degree of excellence far surpassing their most sanguine expectations. For all internal work it possesses a great superiority over every article hitherto in use; it is now being used extensively by Government in the British Museum and other public buildings. IT DOES NOT THROW OUT ANY SALT, but presents a beautifully plain and perfect surface, which may be painted upon dry work within four days without peeling. It is equally applicable for walls or lath, for mouldings, architraves, skirting, or flooring; and is admitted to form the best ground for fresco painting, having been used for many of the prize frescos lately exhibiting in Westminster Hall. It will bear an intense heat without cracking, and for hardness, durability, and economy, cannot be equalled.

186, DRURY-LANE, LONDON.

Agent for Liverpool and Manchester, Mr. R Part, 11, Atherton's-buildings, Dale-street, Liverpool.

STOCKTON LIAS CEMENT,

MANUFACTURED upon principles laid down in Major General Pasley's Essay on Limes and Cements.—It is of a beautiful Stone Colour, and of acknowledged superior quality, free from vegetation, does not crack, and is well adapted for every description of modelling and casting. It has been extensively used at the Earl of Macclesfield's, Ensham-hall, by C. Barry, Esq.; at Sir F. Shuckburgh's, Shuckburgh-hall, by H. E. Kendall, Esq.; for Works now in progress at Marbury-hall, Cheshire; and for many of the Mansions erected during last Summer in the vicinity of London.

WILMCOTE LIAS CEMENT,

Is of inferior colour to the above, from containing oxide of iron, but of very Superior Quality for Tunnels, Sewers, and Hydraulic Purposes; its use is stipulated for by Mr. John Roe, Engineer of Sewers, London.

GROUND LIAS LIME,

For Concrete, and every description of Hydraulic Work, for which purposes it has been used at Woolwich and Chatham Dock Yards, the London Docks, New Exchange, Hungerford Suspension Bridge, Westminster Bridge, Grand Junction Water Works, Holborn Sewers, Regent and Grand Junction Canals, Wood Paving Companies, London and Birmingham Railway Company, for Works in the Alster at Hamburgh, the Kiel and Altona Railway, and various Sea Walls, &c.

At R. Greaves's Works, Stockton, near Southam, Warwickshire, and at No. 2, South Wharf, Paddington, London.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

JOHNS and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never vegetate nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask in any Climate for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.

Architects and Builders who have used this Cement have declared that it requires only to be known, to be universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application to MANN and CO., SOLE AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside, London: of whom also may be had,

JOHNS and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHNS and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, produceable by no other Paint whatever. It is cheap in its application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.

LIFE ASSURANCE.

THE BRITISH MUTUAL LIFE ASSURANCE SOCIETY entertains proposals of any description from 20l. upwards, involving the contingency of human life, and offers the following advantages to its members.

A BONUS ANNUALLY (in shape of low Premiums), equal to those of other offices, granted every three, five, or seven years, and

THE PROSPECT OF A LARGER BONUS than can possibly be obtained at those offices, in the peculiarly beneficial mode adopted in the distribution of the surplus.

Prospectuses and every information may be had on application at the office, 17, New Bridge-street, Blackfriars.

SPECIMEN OF TABLES.

Age.	Annual Premium for £100.	Age.	Annual Premium for £100.	Age.	Annual Premium for £100.
20	£1. 15s. 8d.	40	£2. 14s. 9d.	60	£6. 6s. 7d.

CHARLES JAMES THICKE, Resident Secretary.
17, New Bridge-street, Blackfriars.